



Livable Communities Planning Model Report



Livable Communities Planning Model Report

Prepared for:
Georgia Rail Passenger Authority
Georgia Department of Transportation
Federal Highway Administration
United States Department of Transportation

Prepared by:
Parsons Brinckerhoff Quade & Douglas, Inc.
Sizemore Group Architects and Town Center Designers
Robert Charles Lesser & Co.

Table of Contents

Table of Contents.....	2
List of Figures	4
List of Appendices	6
1. Project Model.....	7
2. Executive Summary	10
2.1 Project Background:	10
2.2 Transit-Oriented Development:	13
2.3 Project Work Plan:.....	14
2.4 Development of the Livable Community Master Plan.....	17
2.4.1 Location of Livable Community:.....	17
2.4.2 Size of Community:.....	18
2.4.3 Brownfield Site:.....	18
2.4.4 Local Road Upgrade:	18
2.4.5 Historic Homestead:	18
2.4.6 School System:	19
2.4.7 Water and Sewer Infrastructure:	19
2.4.8 Market Analysis:.....	19
2.4.9 Biotechnology Facilities:.....	20
2.4.10 Creation of a Linear Research Park:.....	20
3. Project Overview.....	24
3.1 Purpose of the Study	24
3.2 Introduction.....	24
3.3 Background.....	25
3.4 Project Objectives.....	26
3.5 Project Work Plan.....	28
4. Commuter Rail, Smart Growth, Athens to Atlanta Corridor, and Character of Barrow County.....	31
4.1 Lessons Learned From Other Commuter Rail Lines	31
4.1.1 The Maryland Rail Commuter Service	31
4.1.2 The South Eastern Pennsylvania Transit Authority	32
4.1.3 The Virginia Railway Express.....	32
4.1.4 Issues Common To Agencies.....	34
4.2 Transit Oriented Development	34
4.3 The Athens To Atlanta Corridor	37
4.3.1 Mobility Needs.....	37
4.3.2 The Proposed East Winder Station	38
4.3.3 Focus On BioTech Industry.....	40
4.3.4 Concept of a Linear Research Park	41
4.4 Market Analysis.....	43
4.4.1 Local-Serving Retail	45
4.4.2 Local-Serving Office / Service Business	45
4.4.3 For-Sale Residential.....	46
4.4.4 Rental Apartments.....	47
4.5 Visual Preference Assessment	49
4.5.1 Methodology	50

4.5.2 Designing For Livability.....	51
4.5.3 Administering the Survey.....	52
4.5.4 Results	55
5. Technical Issues Surrounding the Proposed East Winder Rail Station Area.....	57
5.1 Technical Workshops.....	57
5.2 Visual Programming.....	58
5.3 Characteristics of the Rail Station Area.....	60
5.3.1 Land Use	60
5.3.2 Zoning.....	64
5.3.3 Environmental Characteristics	65
5.3.4 Water and Sewer Infrastructure	66
5.3.5 Transportation Access	68
5.3.6 Pedestrian and Bicycle Issues	70
5.3.7 At-Grade Crossings.....	70
5.3.8 Station Parking.....	71
5.3.9 Rail Platform and Station Design	71
5.3.10 Station Barriers	72
5.3.11 The City of Russell.....	72
5.3.12 Jurisdictional Issues.....	72
5.3.13 School System.....	73
5.3.14 Bio-Technology As A Community Component	74
5.3.15 Real Estate Analysis	76
6. Development of the Straw Plan and Master Plan.....	79
6.1 Introduction to the Straw Plan	79
6.2 Design Opportunities and Challenges.....	80
6.2.1 Location of the Livable Community	81
6.2.2 Market Analysis and Economic Basis For Development	82
6.2.3 Walking Distance and Community Size.....	83
6.2.4 Open Space and Parkland.....	84
6.2.5 Brownfield Site.....	84
6.2.6 Parcel Ownership	84
6.2.7 Midland Avenue Upgrade	84
6.2.8 Use of Parking Lot	85
6.2.9 Historic Homestead	85
6.2.10 Infrastructure	85
6.2.11 Commercial Activity	85
6.2.12 Linear Research Park	85
6.3 Description of the Straw and Master Plans	86
6.3.1 Entrance into the Livable Community	86
6.3.2 Size of the Livable Community.....	86
6.3.3 Rail Station.....	86
6.3.4 Main Street Atmosphere.....	87
6.3.5 Retail and Restaurant Area.....	87
6.3.6 Civic Circle.....	87
6.3.7 Transportation Network	87
6.3.8 Housing Types	88
6.3.9 BioTech Facilities	90
6.3.10 Elementary School.....	90

6.3.11 Senior Housing and Elderly Care Facilities.....	90
6.3.12 Water and Sewer Infrastructure	90
6.3.13 Library	91
6.3.14 Distinctive Style	91
6.3.15 Existing and New Green Space	91
6.3.16 Creation of a Linear Research Park.....	92
6.4 Master Plan Components	92
6.4.1 Components of the Livable Community.....	92
6.4.2 Images of the Livable Community Components	94
7. Generic Station Development Implementation Process	114
7.1 Overview	114
7.2 Phase 1.....	115
7.2.1 Phase 1A: Develop A Common Vision.....	115
7.2.2 Phase 1B: Project Inception.....	116
7.3 Phase 2.....	117
7.3.1 Phase 2A: Station Area Plan	117
7.3.2 Phase 2B: Master Plan	118
7.3.3 Phase 2C: Capital Improvement Plan	118
7.3.4 Phase 2D: Incentives.....	119
7.3.5 Phase 2E: Ensure “Development-Oriented” Transit.....	119
7.3.6 Phase 2F: Entitlements.....	119
7.4 Roles for Phases 1 and 2.....	120
7.5 Phase3: Development	120

List of Figures

Figure 1: Athens to Atlanta Commuter Rail Corridor and Proposed Stations	12
--	----

Figure 2: Model Process Flow Plan	15
Figure 3: Images of Streetscapes and Types of Development Used in the Visual Preference Assessment.....	16
Figure 4: Livable Community Aerial Plan	21
Figure 5: View of Bridge Leading Into Livable Community.....	22
Figure 6: View of Single Family Homes and Elementary School Leading Towards Main Street	23
Figure 7: Model Process Flow Plan	29
Figure 8: Map of Athens to Atlanta Corridor and Station Locations.	39
Figure 9: Pieces of the Pie in the Linear Research Park.....	42
Figure 10: Images of Streetscapes and Types of Development.....	53
Figure 11: Image to Judge Participants Preference for Type of Residential Development	54
Figure 12: Results From Exercise 2.....	56
Figure 13: Image 3.....	56
Figure 14: Image 10.....	56
Figure 15: Image 15.....	57
Figure 16: Visual Programming Card.....	58
Figure 17: Technical Workshop Phase I, Picture of Visual Programming In Process	60
Figure 18: Year 1998 Existing Land Use Map for Barrow County.....	62
Figure 19: Year 2018 Future Land Use Map for Barrow County.....	62
Figure 20: Year 2000 Existing Land Uses In A Five Mile Buffered Area Around The Proposed Rail Station Location	63
Figure 21: A Portion of Tax Map 91 for Unincorporated Barrow County	65
Figure 22: The Economic Basis of Development.....	83
Figure 23: Civic Circle with Library and Senior Care Facilities	88
Figure 24: Example 1 of Single Family House	88
Figure 25: Example 2 of Single Family House	89
Figure 26: Example 3 of Single Family House	89
Figure 27: East Winder Livable Community Aerial Plan.....	95
Figure 28: Bridge From Midland Avenue, Across the Rail Line, and into the Community.....	96
Figure 29: Proposed East Winder Passenger Rail Station	97
Figure 30: Religious Building.....	98
Figure 31: Shared Parking for Station and Religious Building.....	98
Figure 32: Fields and Ball Park on Either Side of the Bridge	99
Figure 33: Auto Service Center	100
Figure 34: Historic Russell Homestead.....	101
Figure 35: Retail and Restaurants.....	102
Figure 36: Main Street with Retail Shops, Loft Living, and Restaurants.....	103
Figure 37: Apartments	104
Figure 38: Condos	105
Figure 39: Single Family Housing.....	106
Figure 40: Elementary School	107
Figure 41: Civic Structures.....	108
Figure 42: Senior Care Facility – Assisted Living.....	109
Figure 43: Senior Care Facility – Congregate Care	110
Figure 44: Bio-Technology Facilities.....	111
Figure 45: Major Park / Open Space Area.....	112



Livable Communities Planning Model Report

List of Appendices

Appendix A: Project Scope

Appendix B: Invitation to Community Workshop and Community Involvement Material

Appendix C: Market Analysis Report



Appendix D: Presentation – Designing for Livability in Barrow County

Appendix E: Visual Preference Assessment – Exercise 1 and Rating Sheet

Appendix F: Visual Preference Assessment – Exercise 1 Summary Report

Appendix G: Visual Preference Assessment – Exercise 2 and Rating Sheet

Appendix H: Visual Preference Assessment – Exercise 2 Summary Report

Appendix I: Visual Programming Cards

Appendix J: Meeting Minutes from the Technical Workshop Series

Appendix K: Estimated Traffic Counts for the Winder Bypass

Appendix L: Year 2000 Traffic Counts in Barrow County

Appendix M: Aerial Imagery at the Proposed Station Area

Appendix N: Master Plan Presentation

Appendix O: Meeting Minutes from the Smart Growth Task Force Session, Including the Master Plan
Presentation

Appendix P: Transit-Oriented Development Checklist

1. Project Model

The Livable Communities Planning Model Project was initiated in May, 2001 to explore and document the issues surrounding the creation of a livable community anchored by a rail passenger station. The result was a livable community planning process that can assist local governments, planners, developers, property owners, and other stakeholders to identify issues to be addressed.

The outline stands as a “model” for communities to follow. The model assumes stakeholder agreement on the rail alignment and general location of the rail station.

- I. Create A Common Vision Among Stakeholders
 - A. Hold workshop(s) to discuss development options.
 - i. Transportation choices, housing types, commercial activities, community atmosphere, infrastructure, and potential impacts
 - ii. A visual preference assessment is a useful tool to assist the brainstorming process.
- II. Initiate the Project
 - A. Perform analysis and planning for the area in smaller, focus groups of key stakeholders and technical experts.
 - i. Create a general land use plan showing station area uses, parking, and transportation flow.
 - ii. Develop a general financial and development plan.
 - iii. Review regulations, such as zoning and environmental policies.
 - iv. Create draft architectural designs illustrating how the site will be oriented, especially in relation to adjacent land and transportation access points.
 - v. Perform a general market analysis on the real estate and demographic trends, in concert with the land use and architectural plans.
 - vi. Identify site areas that require special attention such as a brownfield, historic homestead, or wetlands.
- III. Develop A Station Area Plan
 - A. Perform a detailed assessment of an area covering ¼ to ½ mile. The plan should include:
 - i. A future land use map, a description of zoning to accompany the land use map, an urban design plan, and a schedule for transit-oriented development and/or development of projects and programs.

- ii. Set minimum development densities, parking maximums, and design requirements that promote walkability.
- IV. Create A Master Plan
 - A. Identify short-term development opportunities or land owned by a public entity that is to be offered for development.
 - B. Consider issues such as development exemptions, special zoning, and alternative public financing that are outside current zoning and development standards.
 - C. Provide a more detailed description of the intended development, roles and responsibilities, and implementation schedule.
 - D. Seek approval of plan by the local government entity that has area jurisdiction.
- V. Prepare A Capital Improvement Plan
 - A. Decide who will pay for the sewer, water, streets, and open space and on what timeframe.
 - i. Provide incentives to the developer to build what is consistent with the vision for the station area.
 - ii. Examine ways to jumpstart the market to make the development a reality.

After the Capital Improvement Plan is developed, the necessary development approvals that comply with zoning, development standards, the station area and master plans, and other policies and regulations governing the area must be acquired.

The majority of steps listed above could be completed by the governing jurisdictional body; however, it might be advantageous to involve consultants to assist with specialized planning, such as to study the environmental impacts and traffic flow, to develop the architectural plans, and to review the financing options.

A community where individuals can live, work, and play is possible, and rail service can provide a catalyst to encourage planned, sustainable development. Due to the usefulness of activities accessible by train, many businesses, schools, and home owners will want to locate in close proximity to the rail station.

2. Executive Summary

2.1 Project Background:

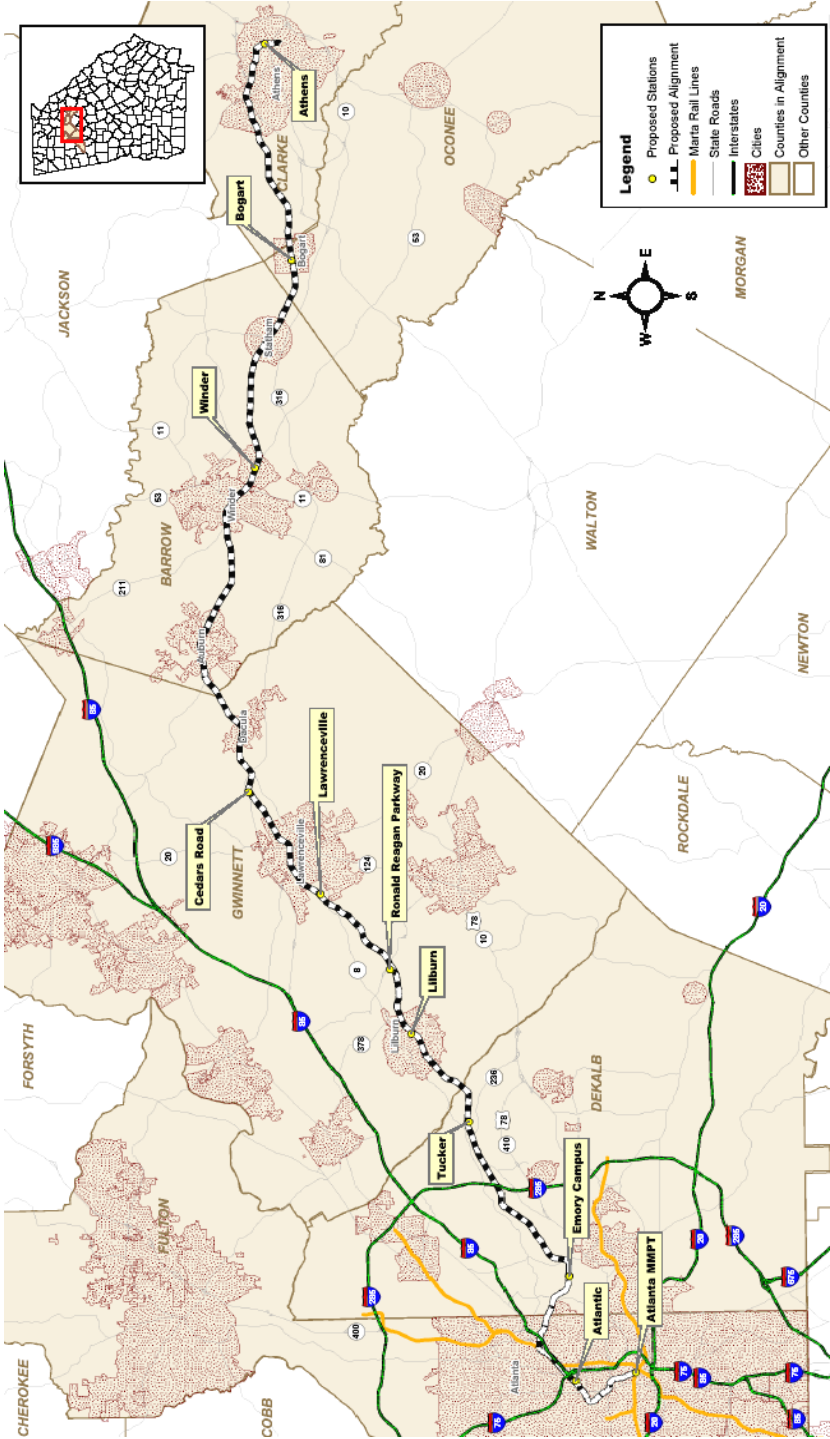
As shown in Figure 1, on the next page, the proposed East Winder rail passenger station is one of several stations planned for the Athens to Atlanta commuter rail line, a 70 mile stretch on existing CSX freight rail line. Commuter service is expected to commence by the year 2008.

In addition to the rail line, the SR 316 corridor which links I-85 and Athens, also known as University Parkway, has recently been completed and is expected to rapidly attract development. The 1 to 3 mile area between the rail line and SR 316 has been referred to as a Linear Research Park, which presently is sparsely populated. The rail line provides a catalyst to encourage planned,



sustainable development along the rail corridor. Due to the usefulness of activities accessible by train, many businesses, schools, and home owners will want to locate in close proximity to the rail station.

Figure 1: Athens to Atlanta Commuter Rail Corridor and Proposed Stations



2.2 Transit-Oriented Development:

Planning for a livable community in near proximity to a passenger rail station involves a combination of transportation, land use, economic development, and funding strategies that discourage the use of single-occupant vehicles around the station. This type of planning is often referred to as transit-oriented development. Development clustered around the transit station brings potential riders closer to the rail facility rather than building housing units, businesses, and shopping centers in other locations. When riders are not located close to an alternative mode of transportation, they are dependant on roads and their automobiles.

It should be noted that since this project focuses on a proposed commuter rail station, the ridership patterns will be somewhat different than if the station served other types of transit. A commuter rail station will have several trains passing through in the morning and again in the evenings. There will be a varied schedule for weekends and special event transport. On the other hand, other types of transit stations, such as passenger rail or bus, may have service arriving and departing on a frequent schedule, perhaps every 10 minutes, throughout the day. Both a commuter rail station as well as a passenger rail or bus station could improve the surrounding community and promote transit ridership via the following:

- Land uses that encourage transit ridership (such as residential / office / retail / entertainment / convenience) and are within an acceptable walking distance from the station.
- A variety of housing types and prices (multi-family, townhouses, apartments, single family, loft, and senior housing) depending on the local market.
- Open spaces for community, public and civic, activity.
- Structured vehicle parking (behind buildings, shared, and on-street parallel) to help utilize space and discourage auto use.
- Concentrated commercial activity usually adjacent to the station.
- Narrow streets and wider sidewalks.
- Sustainable community where quality of life is a priority for residents, workers, and shoppers.



The benefits of transit oriented development are numerous. A few important advantages to this type of planning are the following:

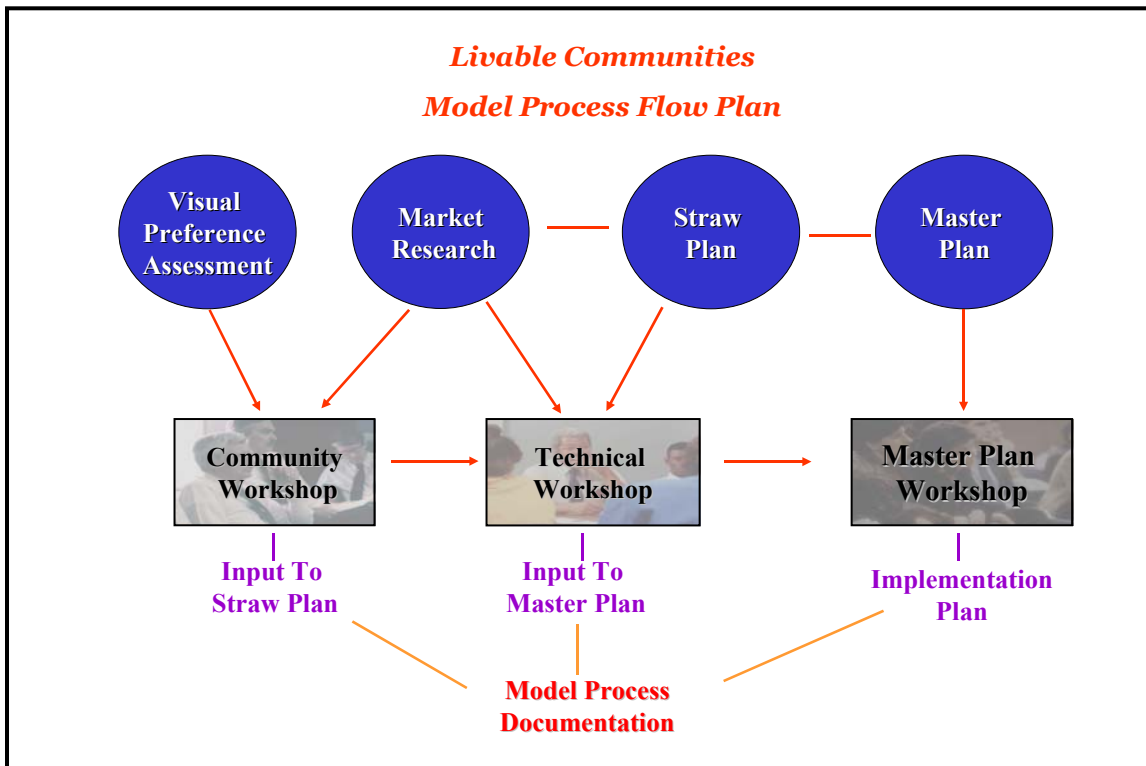
- Increased transit ridership.
- Opportunity for economic development.
- Increased property values close to the station.
- Alternative travel choices for community members which reduces the need to own automobiles.
- Linkage between communities.
- Decreased traffic congestion and improved air quality.
- Opportunity for public-private partnerships to develop the area.
- Sense of community and unique gathering places.
- Public and open space valued.

The focal point of a community surrounding a transit station can be the station itself. The station serves as the connection point to a larger area. The design of a livable community surrounding a transit station must emphasize the pedestrian-oriented environment and encourage the use of public transit. Commercial land uses are a major part of the livable community and can include restaurants, smaller food markets, high-end retail shops, athletic gyms, dry cleaners, post offices, movie theaters, office space, and light industrial activity. Housing, another major component, will be both denser and contain a wider diversity of housing types at varying prices than the typical suburban development. Single family homes on small lots, apartments, condominiums, townhouses, lofts located above commercial activities, and senior housing are types of housing that help to create a compact community that provides residents with options. Open spaces and parks provide opportunities for interaction, and wide sidewalks, trees, and benches for pedestrians help set the stage for a casual, relaxed atmosphere.

2.3 Project Work Plan:

The project components, as shown in Figure 2, have included three workshops focused on understanding community perceptions and desires for the area, gaining needed information from technical experts, and showcasing the master site plan for the livable community.

Figure 2: Model Process Flow Plan



The purpose of the community workshop was to introduce residents and business owners in Barrow County to the idea of smart growth and transit oriented development. A visual preference assessment, created to show livable community design principals, examples, and to measure public support for smart development in rural Barrow County, was used at this workshop. Participants were shown images depicting various living, shopping, and work place scenarios and presented scenarios, such as *You are a senior who no longer drives and uses a cane to get around. You often walk to the Community Center, which is 4 blocks away.* Participants were then asked to answer the following question: *Which street would be most comfortable for you to use?* Three images – A, B, and C --, shown below in Figure 3, were presented, representing varied streetscapes and development types.

Figure 3: Images of Streetscapes and Types of Development Used in the Visual Preference Assessment



The images receiving the highest ratings were single-family homes, one and two stories, on small lots. Each of these pictures featured other characteristics, such as sidewalks, large porches, and white picket fences that likely added to the residential design appeal. Another image type that received high scores was for living space above a retail store or a restaurant which does not currently exist in Barrow County. The lowest score was given to an image showing strip, commercial development on a congested street with telephone and power wires above the street.

In addition to the visual preference assessment, a market analysis report was prepared and presented at the community workshop. This research was conducted to better understand both the current residential and commercial geography in Barrow County as well as to identify development opportunities existing in the East Winder station area in the near and long term. This research identified issues such as the current housing to jobs ratio for Barrow County, the number of for-sale and rental residences in the station area, and the square footage of retail that could survive in near proximity to the station.

The market analysis report recommended that future housing development should focus on single family homes on large lots due to Barrow County's current policies and water and sewer infrastructure. In addition, the report pointed out that the market had not been tested for commercial activity in this area of the county.

While these results are consistent with trends of Barrow County's present situation, the opportunity to plan for novel housing and commercial options requires offering a product that is different from

that currently available. This apparent difference should be taken into consideration, but should not affect the master plan. Rather, in a future market analysis, current trends should be consulted, but taken with the perspective that a new community has the potential to radically alter the housing environment.

Following the community workshop, a series of technical workshops were held to provide the project team with additional information required to lay out the livable community plan. Even though the proposed East Winder rail station location had been chosen, there were numerous questions to investigate as to the characteristics of the surrounding area. Technical expertise and local knowledge were required, and Barrow County Commissioners, biotech scientists, economic development professions, land use planners, and members of the local Department of Community Affairs, to name a few, were brought together for this series of workshops.

Numerous characteristics of the area helped shape the location and design of the proposed livable community, including the following: current and future land use plans; zoning ordinances; environmental characteristics; water and sewer infrastructure; transportation access; bio-technology as a community component; pedestrian and bicycle issues; at-grade rail crossings; station parking; rail platform and station design; jurisdictional issues; and the school system. After learning about these area characteristics, opportunities, synergies, and challenges of designing a livable community in such a way that it complemented the rail station and provided a live, work, play environment were investigated.

2.4 Development of the Livable Community Master Plan

Key findings that have helped shape the livable community master plan are:

2.4.1 Location of Livable Community:

The question of where to locate the livable community was significant. An advantage existed to locate the community north of the station as the rail tracks would not need to be crossed; however, development currently exists to the north and a ridge that drops off sharply stands as a barrier to further neighborhood expansion. The significant amount of undeveloped land to the south of the station, along with the possible connection into the east side of Fort Yargo State Park and the



existing golf course, made this location the most desirable. Furthermore, the opportunity for continued expansion and / or connection with development just north of SR 316 is central to economic development, land use, and transportation initiatives that are emerging for the SR 316 area.

2.4.2 Size of Community:

The size of the community was determined by the maximum distance that a person will walk in a 5 minute stroll. This is assumed to be 1,500 feet or 162 acres. The southern site has over 600 acres of agriculturally zoned land that could be designed for a multi-phased build-out. This is an advantage as the number of residences and businesses that would need to be moved is few. There is plenty of space that can be used as community gathering spots. Groves of trees already growing can be left untouched, in a natural arrangement. And the view of the golf course and Fort Yargo State Park, during a later phase, provide incredible views for upscale housing and office / lab facilities.

2.4.3 Brownfield Site:

The brownfield site within the livable community provides an opportunity to clean up the land, raising the value of the blighted area and adjacent parcels. Governmental assistance will be required to clean up this pollution problem.

2.4.4 Local Road Upgrade:

Currently, an upgrade is planned for Midland Avenue, which will raise the value of the area, complement the pedestrian and bicycle nature of the community, and provide a safer, more accessible connection to downtown Winder. A design challenge associated with Midland Avenue is moving people from this area, over the rail station, and into the livable community. Since the community would be located on the other side of the rail station and tracks from Midland Avenue, a bridge will be necessary. This bridge will provide drivers, walkers, runners, and bikers with an inviting view into the community along with an excellent marketing opportunity for the commercial planned for the front of the community.

2.4.5 Historic Homestead:

The Richard B. Russell historic homestead is not presently open to the public. Its location across from the rail station and significance to Barrow County history makes it a community landmark that



should be restored and opened for public visitation and learning. Furthermore, with this historic site on the property, a historic group might locate their office in the livable community.

2.4.6 School System:

A school is an important component of a planned community for several reasons. First, the influx of families into the area can strain the current school system, lowering teacher to student ratios and quickly depleting limited resources. Secondly, the school system remains a top factor for young couples and parents to consider when moving. The opportunity to provide their children with a better education or access to a specialized school can be a big draw. Lastly, the Chamber of Commerce has expressed that the County has a great need for performing arts and extracurricular classes. A new school is a community resource, with fields that can be used as open space and classrooms for continuing education classes.

2.4.7 Water and Sewer Infrastructure:

Throughout the technical meetings, the issue of needed infrastructure was discussed more than any other consideration or area characteristic. The reason is that development cannot happen without the sewer and water infrastructure, and the nature of the system put into place will affect the type of development. A possible solution is to use a mechanized system for each residential unit or each neighborhood block. This system is ideal for numerous reasons: the county currently allows development on acre plots (less dense than is planned for the livable community) due to septic system requirements, the county's sewer system is reaching capacity, and a new wastewater treatment plant is not only expensive but requires a certain amount of wastewater to operate.

The treated sewage effluent would be distributed into green spaces to both dispose of and provide year-round irrigation for public green spaces.

2.4.8 Market Analysis:

The City of Winder is not attractive to new industry. Wages remain modest, and there is little ability to afford a better quality of community. The City does not receive enough tax support to provide sewer service and the use of septic tanks creates low-density housing. Homeowners are generally



dependant on automobiles. Industry and well-educated workers choose other cities that provide the type of amenities that are found in livable community environments.

We anticipate that the housing units in the livable community will be planned for greater density and market price than the residential market in the City of Winder and unincorporated Barrow County, thus differentiating the product from the existing supply and create demand. In addition, the community needs to have a combination of components which could support the desired life-style of the targeted market. For example, it would include sites for an affluent industry, such as biotech laboratories, attractive housing for a well educated, higher income group, an attractive environment with private shops, restaurants, and public amenities, such as parks, community buildings, and streetscapes plus the best transportation access with rail, bus, and road options. Ideally this community would be self-taxing and able to spend tax money on itself.

In short, a long-term view of “what could be” instead of “what currently is” needs to be adopted.

2.4.9 Biotechnology Facilities:

The expansion of the bio-science industry is being carefully watched and actively pursued by Georgia’s economic developers and policy makers as a possible next statewide initiative. Deep roots in bio-technology exist at Georgia’s universities, Emory and the University of Georgia, in particular.

The two bio-tech facilities planned for the livable community are incubators to generate increased biotechnology activity in the livable community as well as larger corridor area. The location of these facilities takes advantage of the view towards the golf course, the proximity to apartments and affordable housing for young employees, and proximity to the school and restaurants on Main Street.

2.4.10 Creation of a Linear Research Park:

The opportunity exists to assist in the creation of the Linear Research Park between the rail line and SR 316 exists. This area will develop as growth is affecting the area between Gwinnett and Athens Counties with increased congestion and development activities. The livable community is a part of a larger goal to develop this corridor in line with smart growth principals as well as statewide economic development goals.



The architectural master plan is structured to complement the rail station and provide a unique opportunity for a live, work, and play area that does not currently exist in Barrow County. Information such as the above, gained from the community workshops and technical meetings, has played a critical role in laying out the livable community to take advantage of the East Winder site characteristics, create synergies, and mitigate downfalls of the area.

The process followed in this project is flexible and does not need to be exactly replicated by other communities anticipating rail and subsequent development. Rather, this report stands as an overview of the process used at the East Winder site, and will hopefully provide other communities with an understanding of issues that may be encountered and a set of planning tools that can be applied in their jurisdictions. In addition to the material contained in this report, the appendix also contains valuable resources, including meeting minutes from the technical meetings and master plan workshop, a section outlining how to hold an effective public meeting, the visual preference assessment material, the visual programming cards, and an implementation plan detailing roles and responsibilities of the developer, architect, stakeholders, and community.

Images of the livable community, created by Sizemore Group Architects and Town Center Designers, are shown in Figures 4, 5, and 6.

Figure 4: Livable Community Aerial Plan

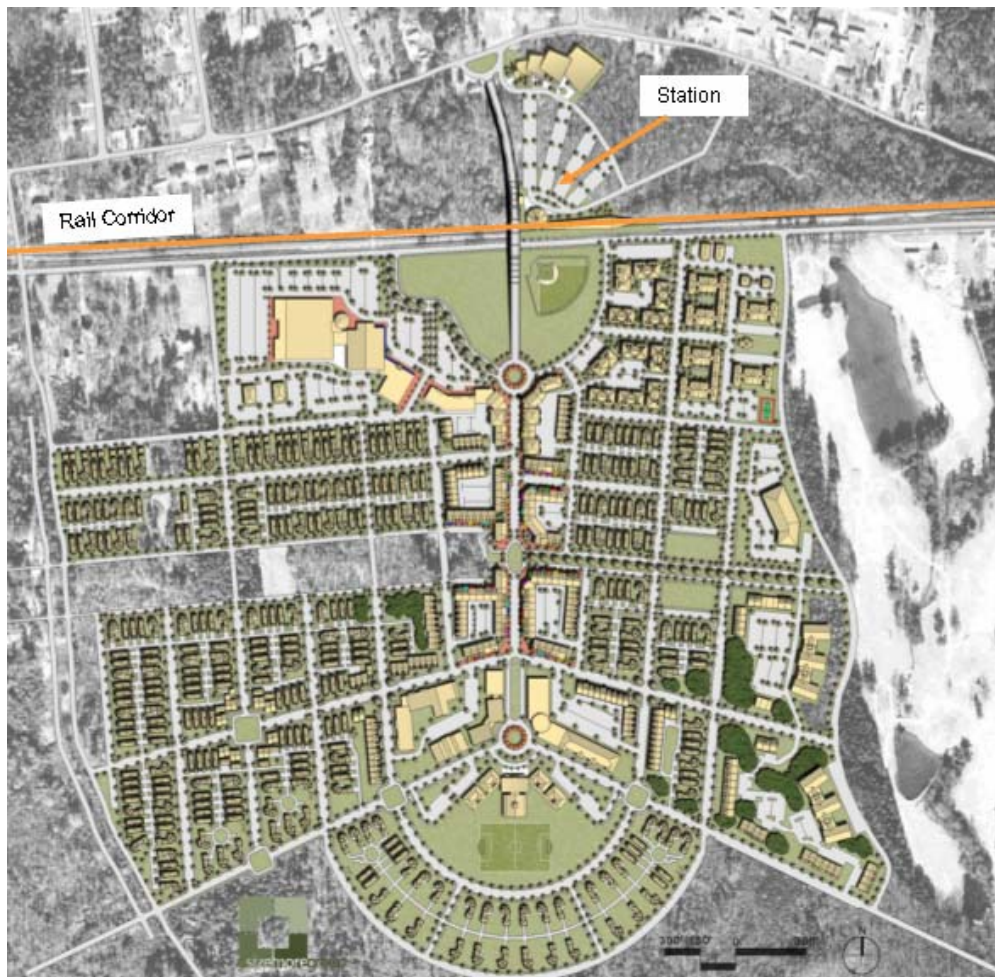


Figure 5: View of Bridge Leading Into Livable Community



Figure 6: View of Single Family Homes and Elementary School Leading Towards Main Street



3. Project Overview

3.1 Purpose of the Study

The Livable Communities Planning Model Project was initiated to explore and document the issues surrounding the creation of a livable community anchored by a commuter rail station. The model process is intended to be replicable by other communities that anticipate a rail station and subsequent development. The proposed East Winder rail station is used as an example to highlight the changes in the fabric of the community that a rail passenger station and livable community can create. In order to strengthen the process, a concept level master plan design and implementation plan have been created to illustrate the issues encountered and decisions made that collectively have helped to transform the East Winder station into an area where individuals can live, work, and play.

This research addresses many of the components of smart growth including land use, zoning, transportation access, environmental concerns, and infrastructure, to name a few, in an area that is rapidly growing due to its location between the economic engine of the state, Atlanta, and another rapidly expanding metropolitan area, Athens. The population of Barrow County and the surrounding counties are growing rapidly, and without intervention by elected officials, the public, developers, and local, state, and federal government agencies, a continuation of sprawl is expected in Barrow County in the next decade. A livable community located in close proximity to the East Winder rail station is one way to alter the present course of development.

3.2 Introduction

The primary development style since the end of World War II is sprawl. Sprawl is characterized by dispersed development outside of compact urban and village centers, along highways, and in rural countryside. Sprawl contributes to the loss of open space and farmland, to the wasteful county extension of infrastructure over large areas of undeveloped lands, and to the decay of towns and cities where infrastructure already exists. The root cause of sprawl is the failure to take into account the impact of individual building projects on the larger physical environment until after congestion is an issue and open space is nearly gone.

The introduction of rail passenger service into a community can, with planning and forethought, help to focus development around rail stations, creating an environment not characterized by sprawl. The concept known as transit oriented development (TOD) is anchored by the rail station, in this case, with access to other transportation systems, such as buses, shuttles, and local roads. This type of development is compact and denser than a sprawling landscape, is pedestrian and bicycle friendly, and is comprised of various types of land uses, such as residences, office space, and retail shopping. Rail oriented developments can be livable communities in which the linkage between housing, jobs, schools, places of worship, and parks is considered a priority, not an afterthought. Additionally, economic development and environmental sustainability are often priorities of a planned area.

A livable community centered around a transit station can provide residents with a better quality of life than an auto dependent environment. In a livable community setting, the opportunity for a young couple to own only one car can be a reality. Parents can walk their children to school, and parks provide the space for pick-up games of soccer or for a Sunday picnic. In addition to these quality of life elements, opportunities exist for private-public partnerships beneficial to both entities. This collaboration can provide efficient and effective funding, management, and maintenance of complex community systems, such as water and sewer, fiber network cable, and schools.

3.3 Background

The proposed East Winder rail passenger station is one of several stations planned for the Athens to Atlanta commuter rail line, a 70-mile stretch on existing CSX freight rail line. Commuter service is expected to commence by the year 2008. In addition to the rail line, the SR 316 corridor, also known as University Parkway, linking I-85 and Athens, has recently been completed and is expected to attract development rapidly. The one to three mile area between the rail line and SR 316 has been referred to as a Linear Research Park which presently is sparsely populated. Upcoming changes, such as the population growth and expansion of the bio-tech industry, to this corridor provide the needed catalyst to encourage sustainable development along the rail line. The variety of resources, entertainment, and employment accessible by train, will stimulate businesses, schools, and home owners to locate in close proximity to the rail station. And thus the rail station will have an impact

on development far beyond the station area. Therefore, through this research, the following issues and problems can be addressed:

- The Governor has identified the need to link transportation, land use, environmental issues, and consensus of the public.
- There is increasing resistance and rejection of sprawl development by the marketplace and the general public.
- Economic justification for public transit is weak because of low-density sprawl development that is not easily accessible to rail stations in adequate numbers.
- Air quality problems will accompany auto use.
- Low-density development strains the cost of public infrastructure, raises taxes, and causes public rejection of growth, roads, or mass transit.
- Continued sprawl growth may ruin opportunities to attract new high technology companies that would bring quality jobs to Georgia.
- As the physical environment deteriorates, less new development will be attracted, thereby reducing economic development potential.
- In many cases, young people cannot afford to own houses and cars. Proper planning and investment can enable them to live without a car or with fewer cars.
- An alternative is possible connect how people want to live with the design of their communities, linked by appropriate transportation means.

3.4 Project Objectives

The main objective in this study is to document the process to create a livable community in proximity to a proposed commuter rail station. By gathering and synthesizing information about the existing community, the target market, public input on housing types, street character, feel of shopping centers, and environmental considerations, to name a few, a model livable community will be created around the proposed East Winder rail station. Numerous other communities will be in the same position as Barrow County in coming years, anticipating a rail station and subsequent development. This process can be replicated by other communities in response to proposed rail station locations.

The study of a livable community has several planning goals. While these goals will not be measured by this study effort, they are documented as a part of the replicable process. The first goal is to improve the efficiency of the transportation system. Currently the project corridor includes a freight rail line and a heavily traveled highway, SR 316. With the addition of rail passenger service, the transportation system will be enhanced, offering a new mode choice. The project will allow small towns along the route to plan for growth in a non-sprawl pattern, especially with regard to the rail stations. With proper planning and zoning around these stations, the rail alternative can be made even more attractive for work, shopping, and recreation trips and thus improve the efficiency of the multimodal transportation system, avoid sprawl development, reduce congestion as the population increases, and increase potential rail ridership through good design.

The second goal of the livable community study is to reduce the impacts of the transportation system on the environment. Throughout the Atlanta metropolitan region, there is growing consensus that additional expanded roads will create more congestion. Rail passenger service offers an alternative mode of transportation that Atlantans have not had in many decades. If the rail stations are tied to mixed-use development, the ridership of the rail alternative can be greatly enhanced. Costly additional infrastructure construction for transportation can be avoided thus reducing the impacts of transportation on the environment. This project can result in land use design that takes the best advantage of the existing infrastructure, including the rail passenger service element and existing highways and roadways.

Thirdly, the livable community concept will help reduce the need for costly future investments in public infrastructure. Planning for rail passenger service and for the Linear Research Park between the existing rail corridor and SR 316 using existing infrastructure and strategically enhanced infrastructure can target investments for the next decade, make the best use of scarce public dollars, and focus private investment. The livable community can also help to ensure efficient access to jobs, services, and centers of trade. With proper rail station development, the Linear Research Park concept along the rail corridor and access to business activity will be assured. Mixed use rail station development, with affordable housing in proximity to the stations will reduce the percent of auto trips for non-work trips, bring people to jobs, and create jobs that are close to the stations.

The fourth goal to be met by the livable community concept will be to involve the private sector in the planning process in order to generate the excitement that the project needs to reach fruition. This plan will incorporate private sector interests that are in line with public preferences by examining development patterns, planning development solutions, and identifying strategies to encourage private sector development.

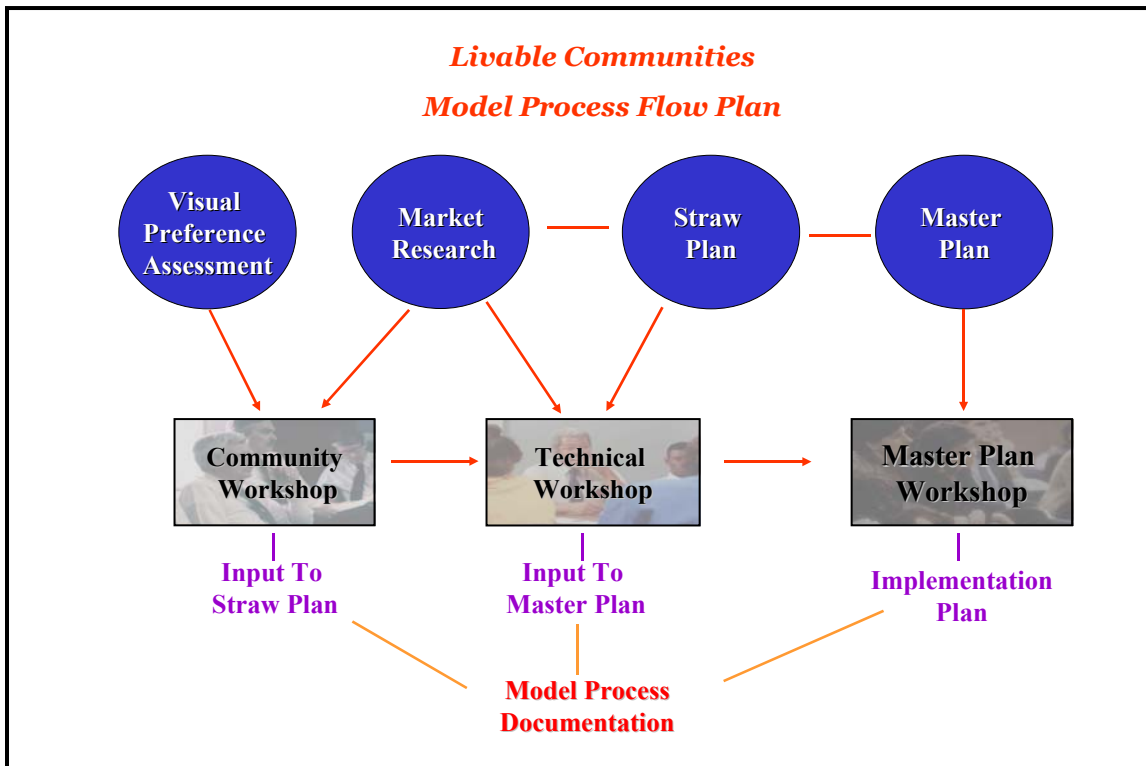
3.5 Project Work Plan

This Livable Communities Planning Model Project is jointly funded by a Federal Highway Administration (FHWA) Transportation, Community, and System Preservation Pilot Program (TCSP) grant and by the Georgia Department of Transportation (GDOT). The TCSP program is a comprehensive initiative of research and grants focused on the interaction of transportation, land use, the environment, and community planning. Private sector based initiatives backed by state, local, and metropolitan planning organizations are key components to the research funded by this program.

The project has been conducted over a 15 month time period by three companies, each carrying out a specific responsibility. As the general engineering consultant to the Georgia Rail Passenger Authority, Parsons Brinckerhoff Quade & Douglas (PB), a leading transportation planning and design firm with over 100 years of experience, performed the project management, workshop facilitation, visual preference assessment, data gathering, coordination among partner firms and stakeholders, model process document creation, and implementation plan. Sizemore Group (SG), an architectural firm with experience in consensus building and programming, planning, and design of town centers and major architecture projects, created the concept level straw plan and master plan designs for the East Winder rail station area, described their process and rationale for design decisions, and assisted with the workshops and information gathering. Robert Charles Lesser & Co (RCLCo), a nationally recognized real estate advisory services firm, produced the market analysis report. It should be noted that reference to the “Team” throughout this document refers to these study team members.

Figure 7 illustrates the project process and the relation of the project activities.

Figure 7: Model Process Flow Plan



The project components, as identified in the Project Scope, located in Appendix A, are the following:

- A Visual Preference Assessment was created for types of housing, streetscapes, shopping centers, and park/open spaces to help residents envision change in their communities. This information was presented at the Community Workshop. The participants gained a better understanding for what the character of the area around the station could be, and the consultant team gained a sense of the resident's desires for their community.
- A Market Analysis Report was prepared. This research identified issues such as the current housing to jobs ratio for Barrow County, the number of for-sale and rental residences that the rail station area could support in the short and long terms, and the square footage of retail that could survive in near proximity to the station. This information was presented at the Community Workshop.

- Materials were developed for the workshops that are instructive in regards to sprawl and smart design techniques.
- Three Workshops were held with residents, local officials, planning professionals, and technical experts. The workshops had the following purposes:
 - Workshop #1: Community Workshop. Share the sprawl, smart design, market research materials, and visual performance surveys.
 - Workshop #2: Technical Workshop. Solicit needed technical information and review / receive feedback on draft conceptual designs and ideas with all parties.
 - Workshop #3: Master Plan Workshop. Review final conceptual designs and implementation plans.

At the recommendation of the consultant team, only technical experts were included in the second workshop for two reasons. First, due to the sensitive nature of the information being presented, it was decided that it was not appropriate to disclose the proposed location of a theoretical Livable Community at this early stage and raise expectation levels without follow-on effort. Secondly, technical information was needed to better understand the site and create a solid design.

- A preliminary design of one rail station area was created, called the Straw Plan, based on the information gained through the Visual Preference Assessment, Market Analysis, and community input at the first workshop.
- The Straw Plan was refined into a Master Plan based on the knowledge gained at the Technical Workshop and further conversation with technical experts representing a variety of fields.
- An Implementation Plan was prepared generic enough to be applied to other communities.
- The project activities, including summaries of workshops were documented, and details of the steps, issues, and challenges of creating a livable community around a passenger rail station were recorded.

The appendix contains additional information created throughout the project. A section on advertising for, including an invitation to the first Community Workshop, and holding a public

involvement meeting is included in Appendix B. All other workshop materials, including meeting minutes from the technical sessions, are referenced throughout this text and included in several of the Appendix sections.

4. Commuter Rail, Smart Growth, Athens to Atlanta Corridor, and Character of Barrow County

4.1 Lessons Learned From Other Commuter Rail Lines

Rail passenger service has traditionally been a major component of transportation along the eastern seaboard, in cities such as Boston, New York, Philadelphia, and Baltimore-Washington, as well as throughout Europe and Japan. These U.S. cities dominated the commuter rail market. Several new services have been established in the last twenty-five years in Northern Virginia, South Florida, Los Angeles, and San Diego, to name a few. Three operational commuter rail services have been evaluated to detail challenges and successes that they have faced in meeting their community's needs. The three systems discussed below are the Maryland Rail Commuter Service, the South Eastern Pennsylvania Transit Authority, and the Virginia Railway Express.

4.1.1 The Maryland Rail Commuter Service

The Maryland Rail Commuter Service (MARC) has been in operation since the late 1970's under the direction of the state of Maryland. The 187-mile system provides service to commuters in Maryland, the District of Columbia, West Virginia, and Virginia. The system provides connections to light rail, metro subway, bus, and additional commuter service through VRE (Virginia Railway Express) and regional rail service through Amtrak.

MARC, operated under contract with the National Railroad Passenger Corporation (Amtrak) and CSX Corporation, provides service to 20,000 rail passengers per day. The system, composed of several inter-modal facilities, provides several optional services: suburb to downtown and downtown to suburb connections, access to suburban commuters using feeder buses and park and ride facilities, and service for special events and sporting arenas.ⁱ

Though MARC does not own or operate any development surrounding the rail stations, the agency has taken a proactive approach to preserving communities. Working with local governmental

agencies and “watch dog” groups, MARC has participated in planning workshops and is under the umbrella of the Maryland Department of Transportation’s Mass Transit Administration (MTA). The MTA is staffed with planners and community affairs professionals.

Creative rail station design and development is evident specifically at the Penn Station in Baltimore as well as several other stops throughout the service area. The revitalization of Penn Station has had a positive economic impact on the surrounding community. Boarded-up homes and nightspots, once surrounded the community. It now hosts eateries, theaters, loft space, remodeled row homes, and corporate space due its close proximity to the station and local bus service.

4.1.2 The South Eastern Pennsylvania Transit Authority

The South Eastern Pennsylvania Transit Authority (SEPTA) has been in operation for over 100 years. Commuter service is one component of the regional system. Traditionally, rail station development was not “planned,” rather it occurred along the rail line as developers and municipalities wanted increased access to downtown Philadelphia as well as neighboring New Jersey and New York. The R5 and R6 commuter rail lines are representative of the development growth in the area that is most like the growth in the northeast Atlanta region.

SEPTA provides commuter rail service to Pennsylvania, New Jersey and Delaware. The system provides access to Metro subway, light rail, bus, and intercity rail service. Through close operating relationships with the Delaware Valley Transit Authority, CSX, and Amtrak, SEPTA moves over 100,000 people per day. In addition, the benefit of rail station development has been realized in the last twenty years. The charter of SEPTA precludes involvement in any decision-making processes for the areas surrounding the rail stations that the Delaware Valley Transit Authority designs and builds. However, community officials and planners have formed an alliance with SEPTA and have completed several Environmental Impact Statements (EIS’s) for the development of new rail lines.

4.1.3 The Virginia Railway Express

The Virginia Railway Express (VRE) was created in 1986 to bring commuter rail service to northern Virginia and provide access to the Washington, D.C area. Through an inter-governmental Memorandum of Agreement with the Northern Virginia Transportation Commission (NVTC), Potomac and Rappahannock Transportation Commission (PRTC), and local counties and cities, VRE began planning and development for service. A partnership with CSX, Norfolk Southern,

Conrail, and Amtrak allow for use of rail lines, stations, and crews throughout the region for VRE operations and have contributed to the success of the line.ⁱⁱ

Commuter rail operations began in 1992 and ridership has grown to over 8,000 trips per day. Area development has rapidly increased over the last twenty years. The areas of Manassas and Fredericksburg, the end of the west and south lines respectively, are no longer rural communities. Sprawl has impacted these once sleepy rural communities. VRE includes the operation of park and ride facilities, feeder bus service, access to the Washington, D.C. Metro (subway), and MARC, Maryland's commuter rail line.

The area that VRE expanded into is more comparable to Atlanta's expansion into suburban and rural communities than the areas that MARC and SEPTA entered. The community development at the rail stations in Manassas and Fredericksburg mirrors many of the challenges facing the Barrow County communities. Furthermore, VRE has made public the challenges that an agency may face to provide initial service to commuters. VRE has had many successes and failures in the operation of the rail line, though many of the "failures" should be considered "lessons learned."

Unfavorable outcomes or challenges have been identified in several key areas of the VRE commencement of service: slow response by management due to contractually bound oversight from several commissions, distorted ridership patterns due to different parking fees at various station locations and park and ride facilities, privately owned park and ride facilities, and unenforceable service improvements/requests due to railroad opposition. However, VRE has been able to negotiate key partnerships that may have increased favorable outcomes or may have eliminated several concerns: the inclusion of additional surrounding cities and counties in the corridor, incorporating real estate interest from the inception of the project to establish a stronger financial base, setting up the corridor rail service under the operation of one entity such as Amtrak, instead of two entities (Amtrak and VRE), and developing contracts with railroads that reward all parties for profitable operations. These arrangements are no small feats.

In addition to the above successes resulting from partnerships, several factors have been key to VRE's overall success: a ready-made market for passenger rail service, successful marketing campaigns, persistence in planning and developing the commuter rail program despite opposition,

style and vision of top management, and dedicated funding sources. Another positive for the Virginia area has been the development of planned communities around the rail stations providing alternate modes of travel and services. Manassas, in particular, has benefited from the opening of a rail station. Downtown Manassas, once replete with abandoned buildings and very few businesses, now boasts restaurants, shops, and residential units all centrally located to the rail station.

4.1.4 Issues Common To Agencies

From research of the MARC, SEPTA, and VRE rail lines, several issues seemed to affect all agencies in their respective pursuits to initialize commuter service.

- Issues affecting smaller communities include financially constrained metropolitan planning organizations, creation of a transportation improvement programs, extensive public involvement process, and infrastructure to support development.
- All communities will be concerned with utilization of existing rights-of-way and infrastructure to add to commuter capacity and decrease expenses (highway expansion, relocations, and environmental review can be almost eliminated).
- Recovery of the value created by the presence and availability of rail to be used to finance rail development.
- Managing agencies and government officials will be faced with creating cooperative agreements with rail authorities and the railroad industry, identifying an operation schedule that will satisfy the railroad and rail transit services, identifying proper equipment that is commuter rail transit friendly, and creating cost sharing agreements and development partnerships.

Many of the lessons learned by other operating agencies and authorities are important for the Athens to Atlanta commuter rail service and communities that will develop around the rail stations. The partnerships created, funding strategies, and location of station, transfer facilities such as park and ride and feeder buses, and community sites can add to or detract from the quality of both rail service and community development.

4.2 Transit Oriented Development

Transit oriented development (TOD), the current term for planning for the area around a bus or rail station, involves a combination of transportation, land use, economic development, and funding

strategies that discourage the use of single-occupant vehicles around a transit station. Development clustered around the transit station brings potential riders closer to the transit facilities rather than building residential, business, and shopping centers in other locations. When riders and the transit systems are not located in close proximity, riders are dependant on roads and their automobiles.

It should be noted that since this project focuses on a proposed commuter rail station, the ridership patterns will be somewhat different than if the station served other types of transit. A commuter rail station will have several trains passing through in the morning and again in the evenings. There will be a varied schedule for weekends and special event transport. On the other hand, other types of transit stations, such as passenger rail or bus, may have service arriving and departing on a frequent schedule, perhaps every 10 minutes, throughout the day. Both a commuter as well as another type of transit station can improve the surrounding community and positively affect riders experience with the following features:

- Land uses that encourage transit ridership (such as residential / office / retail / entertainment / convenience) and are within an acceptable walking distance from the station.
- A variety of housing types and prices (multi-family, townhouses, apartments, single family, loft, and senior housing) depending on the local market.
- Open spaces for community, public and civic, activity.
- Structured vehicle parking (behind buildings, shared, and on-street parallel) to help utilize space and discourage auto use.
- Concentrated commercial activity usually adjacent to the station.
- Narrow streets and wider sidewalks.
- Sustainable community where quality of life is a priority for residents, workers, and shoppers.

The benefits of transit oriented development are numerous. A few important advantages to this type of planning are the following:

- Increased transit ridership.
- Opportunity for economic development.

- Increased property values close to the station.
- Alternative travel choices for community members which reduce the need to own autos.
- Linkage between communities.
- Decreased traffic congestion and improved air quality.
- Opportunity for public-private partnerships to develop the area.
- Sense of community and unique gathering places.
- Public and open space valued.

The focal point of a community surrounding a transit station can be the station itself. The station serves as the connection point to a larger area. The design of a livable community surrounding a transit station must emphasize the pedestrian-oriented environment and encourage the use of public transit. Commercial land uses are a major part of the livable community and can include restaurants, smaller food markets, high-end retail shops, athletic gyms, dry cleaners, post offices, movie theaters, office space, and light industrial activity. Housing, another major component, will be both denser and contain a wider diversity of housing types at varying prices than the typical suburban development. Single family homes on small lots, apartments, condominiums, townhouses, lofts located above commercial activities, and senior housing are types of housing that help to create a compact community that provides residents with options. Open spaces and parks provide opportunities for interaction, and wide sidewalks, trees, and benches for pedestrians help set the stage for a casual, relaxed atmosphere.

Benefits to transit oriented development are not limited to increased quality of life for residents and workers. Focusing development at the station site is also a public investment tool. Not only is transit ridership increased due to the number of people clustered within walking distance to the station, but the increased ridership translates into increased transit revenues from operations. In addition, local officials, governments and planning groups advocate this type of development because it can decrease vehicle crashes, air quality from emissions, road infrastructure costs, and can increase the area's tax base. Furthermore, developers view livable communities around transit stations as market opportunities. Land is more expensive, and this cost can be passed onto home and office buyers. A study on the rail transit's effects on property values shows that prices drop dramatically

within short distances away from stations. For instance, Arthur Nelson, a regional planning professor at the Georgia Institute of Technology, found that in Atlanta in 1998, the price per square meter fell by \$75 for each kilometer away from a transit station. Interesting to note is that the price rose by \$443 for a location within special public interest districts.ⁱⁱⁱ

4.3 The Athens To Atlanta Corridor

4.3.1 Mobility Needs

Barrow County is located approximately forty-four miles northeast from the City of Atlanta. The Atlanta metro statistical region's population has increased 39% according to 2000 Census data as compared with the 1990 Census information.^{iv} One result of this growth is that outlying rural cities are turning into sprawling centers. Barrow County's population has doubled in the last decade to over 46,000 residents.^v Winder, Barrow County's largest city, is feeling the pinch of the day-to-day congestion. This congestion is focused ½ mile from the proposed rail station, at the existing main street at-grade rail crossing. Winder has access to both I-85, one of the major highways traveling south to Atlanta and beyond, as well as SR 316, a newly completed highway that is at a standstill during peak hours and reports a high number of crashes due to its interface with county roads.

The Georgia Rail Passenger Program (GRPP) has responded to the mobility needs of this area and the congestion on the road network by evaluating potential commuter rail service on the existing CSX freight rail line. In January, 2002, a locally preferred alternative (LPA) was selected for the Athens to Atlanta corridor. According to the January – February issue of the Georgia Rail Journal (GRJ), the LPA is the 70-mile CSX rail line from the “Classic City to the Capital City”^{vi} and is the best option for the region to move 9,000 commuters per day. As shown in the Figure 8, the proposed rail service passes through stations located at Athens, Bogart, Winder, Cedars Road, Lawrenceville, Lilburn, Tucker, Emory University, Atlantic Station, and the Atlanta Multi-Modal Passenger Terminal. As stated by E.H. Culpepper, GRPA Vice-Chairman and Development Director of the Classic Center in Athens, in the GRJ, “There are important issues for our state and the local communities. We are going to have to listen intently and be very responsive to the concerns of the people who live along the route.”^{vii}

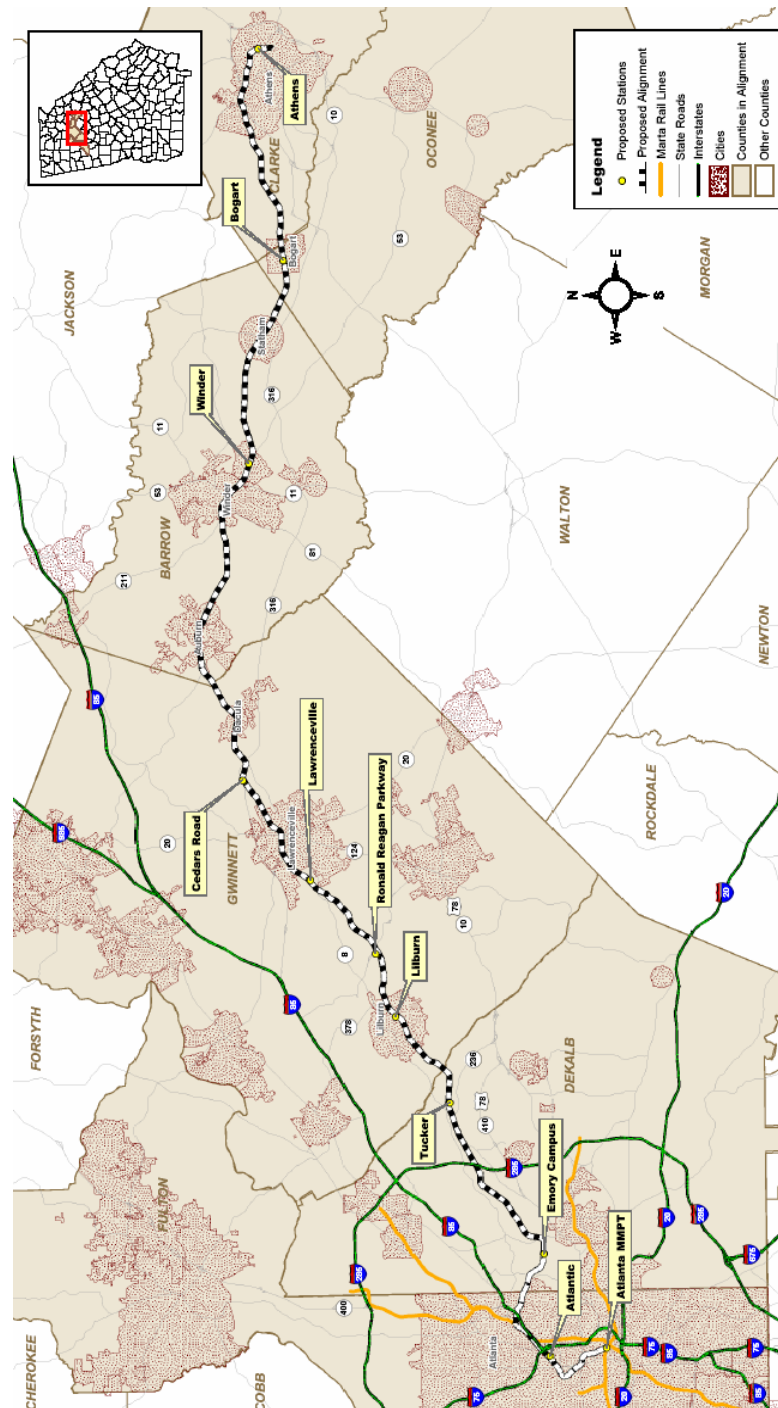
4.3.2 The Proposed East Winder Station

The commuter rail station sites shown in Figure 8, have been selected by the Georgia Department of Transportation as part of the Athens-Atlanta Transportation Corridor Major Investment Study (MIS). The MIS recommended a Winder passenger station location near the airport at Pickle Simon Road, rather than a location closer to downtown Winder, due to the City of Winder's concern about traffic complications should the selected site become a commuter rail station in the future. However, during the Environmental Assessment (EA) phase of the MIS, road improvements including the proposed Winder By-Pass became foreseeable and the City of Winder and Barrow County requested that the site be moved in closer proximity to downtown Winder with access via Midland Avenue. The selected site was also the preferred site of the Georgia Conservancy, based on a multi-year consensus building process involving citizens, local officials, developers, planners, engineers, and students. A Georgia Tech regional planning and architecture studio class assisted with the Geographic Information Systems analysis for the corridor and participated in planning and conducting public meetings. Two primary criteria were developed for the selection station locations, according to the "University Parkway & Atlanta – Athens Rail Corridor Regional Summary:"^{viii}

- The station site must meet the fundamental transportation criteria of rail operation, station and parking design, and access to the station.
- The larger station area must be able to accommodate desired transit related development without significant negative impacts and provide a positive contribution to overall land use and growth management policies in both the regional and local communities.

It is believed that the siting of the East Winder rail station meets these two objectives and the objectives of all contributing agencies and organizations.

Figure 8: Map of Athens to Atlanta Corridor and Station Locations.



4.3.3 Focus On BioTech Industry

The development of the SR 316 corridor has received attention due to the fact that without planning, this newly completed road has the potential to become a sprawled, auto-dependant environment.

This corridor, situated between Emory University and the University of Georgia (UGA), is recognized as a prime research area for the state. Potential exists for development with a technology focus, most notable bio-technology, to become widespread between Emory and UGA. Statewide decision makers are looking at the bio-sciences as a potential economic engine to stimulate sustained growth. According to the November, 2001 issue of the *Georgia Trend* magazine,

While Metro Atlanta is just beginning to come together to figure out a coherent biotech strategy, folks in Athens are already implementing their own plans to become the biotech hub of Georgia. The University of Georgia is touting its formidable research and facilities; the Athens-Clarke County Unified Government is promising one-stop shopping and beefing up the area's infrastructure; the Economic Development Foundation is working on financial incentives; the University Parkway Alliance is promoting Highway 316 as a biotech corridor linking Athens to Emory University; and Athens Technical College is initiating a program to train badly needed technicians to work in biotech labs^{ix}.

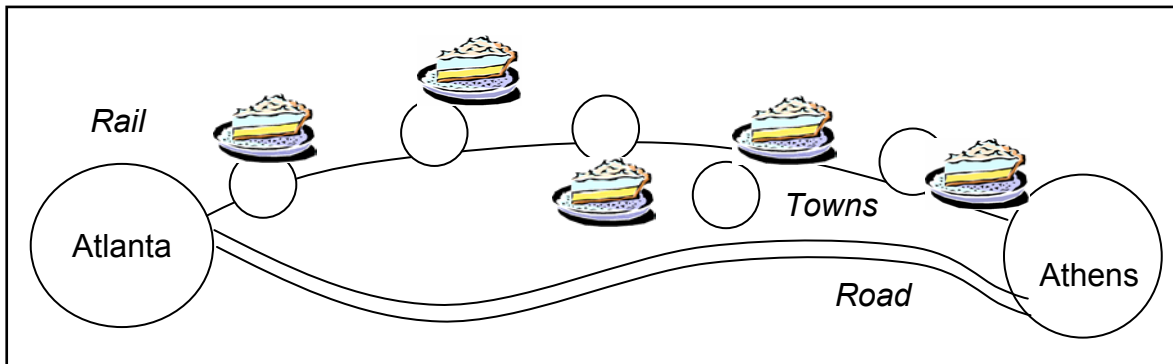
4.3.4 Concept of a Linear Research Park

The distance between the CSX rail line and SR 316 is between one mile, at its narrowest point, and three miles, at the widest. The relatively undeveloped land between the rail line and SR 316 is being called the Linear Research Park by planners and economic developers, playing off of the University Parkway and bio-technology themes. The Linear Research Park could be similar to North Carolina's Research Triangle in that several counties and cities would share the resources and benefits associated with having a large number of technology companies grouped together.

The Linear Research Park and the Research Triangle would also be vastly different. The Research Triangle is currently experiencing heavy traffic congestion within the Triangle and between neighboring communities. According to Georgia Power's Jim Vaseff who has helped develop the Linear Research Park concept, the congestion has become a significant problem because 50,000 workers are employed within the Triangle, but the housing for this area is located outside of the Triangle. This results in a mass commute into and out of the Triangle each day. Jim Vaseff has

compared the Research Triangle with a pie, and the Linear Research Park with pieces of the pie. Instead of being concentrated at one location, these pieces are spread throughout the corridor, as shown in Figure 9, to create the whole pie.

Figure 9: Pieces of the Pie in the Linear Research Park



If developed with smart growth principals in mind, the Linear Research Park could embrace a work, live, and play philosophy. Housing, work, schools, and shopping could all be located in close proximity to each other. Transportation networks would connect people and services, and rail would enable commuters to travel to Athens or Atlanta without driving. Several other benefits associated with this development scheme include the following:

- Room for development expansion. The area is not constrained and could be extended to meet other such parks.
- The pieces of the pie would fit the character and desires of the area. No two pieces would need to be the same.
- The towns along the rail line and University Parkway have infrastructure bases that could be used as incentives for companies to locate. Focused development could commence sooner rather than later.
- Expanding upon existing infrastructure is far more sustainable than developing on greenfield land.
- Rural land costs less than urban land, although there is typically less existing supporting functions and infrastructure

- Congestion can be mitigated due to the fact that numerous transportation patterns will evolve. There will be numerous business and town centers that people are traveling to and from.
- People can live close to their work locations.

4.4 Market Analysis

Market research was conducted to better understand both the current residential and commercial geography in Barrow County as well as to identify the development opportunities existing around the proposed station area in the near and long term. The market analysis prepared by Robert Charles Lesser & Co (RCLCo), a nationally recognized real estate advisory services firm, is based upon local and regional economic, development, and market trends. This information was gained in part by trend analysis, interviews with local officials, study of for-sale, for-rent, retail, and office uses, and preliminary statistical analysis of land uses to understand the demand potential.

The report, located in Appendix C, compares Barrow County to the Atlanta metropolitan statistical area (MSA) to establish the differences in economy and demographics. The economic overview states that Barrow County is a bedroom community for both Atlanta and Athens. Barrow County has a job rate of .55 jobs per household; where as, the Atlanta MSA reports 1.6 jobs per household. This statistic may be low for Barrow County due to the number of jobs in neighboring Gwinnett and Athens Counties. However, RCLCo found that in the last couple of years, the household and employment growth have occurred at a similar rate with approximately 600 new households and 770 new jobs each year.

Another important economic factor facing Barrow County is that local-serving retail and manufacturing comprise a large percentage of the employment sector as other job sectors are not present. Retail jobs account for 22% of the local industry, a higher percentage than that reported for the Atlanta MSA. Manufacturing makes up a substantial component, with one in every four jobs, of the County's smaller employment base. Local service oriented businesses make up 15% of the jobs in Barrow County, less than that in the Atlanta region. An important factor discussed in the market analysis report is that much of the County's employment growth has been in retail, yet with super

stores like the Mall of Georgia located a short drive from downtown Winder, even retail dollars are being lost.

Due to the location of Barrow County between two urban areas, the demographic growth, similar to the economic growth, is strong. RCLCo speculates that former residents of Gwinnett County are relocating in Barrow to take advantage of the rural character and lower property taxes as well as two-worker households in which one commute is to the Atlanta region, especially Gwinnett, and the other is to Athens. The majority of houses in Barrow County are older than comparable properties in the Atlanta MSA, and the largest housing sector is valued under \$125,000. These lower housing prices are not surprising when close to 70% of the household incomes are reported to be \$50,000 or less.

RCLCo made the following key assumptions in order to be able to identify economic and development opportunities around the station site:

- Commuter rail will take time to become established and recognized as a viable alternative to vehicle travel due to the fact that exposure to rail transit in metro Atlanta is limited to two counties and presently there is no commuter rail in the state of Georgia.
- In the short term, commuter rail will not have a significant impact on the development in Barrow County. Planning efforts may shorten the time frame needed to incorporate rail into the development patterns.
- Development that will occur around the station in the near term will be in line with existing trends.
- Commuter rail stations in suburban and exurban areas are not likely to stimulate development on their own. Development efforts on the part of Barrow County will be needed to create a sense of community in the station area.

Robert Charles Lesser & Company analyzed the current market situation and future opportunities, in reference to the station area, for four types of development: local-serving retail, local serving office and service, for-sale residential, and rental residential. Market research shows that local-serving retail, as stated above, has contributed to the County's employment growth but continues to face competition from mega-stores located within a thirty-minute drive. The majority of Barrow County's

retail development has occurred in downtown Winder, along SR 8/29, due to the location of residents and the current restriction of commercial development along SR 316. Strip developments line Winder's main streets and shoppers need to have an automobile to get from one store to their next destination. Recently, a retail strip center, anchored by WalMart was built at the intersection of SR 8 and SR 11, between downtown Winder and the station site.

RCLCo comments on the potential for a commercial development close to the station to negatively impact the downtown Winder stores. Retail that complements but does not directly compete with Winder's downtown shopping district is advocated. In addition, the future Winder Bypass creates an opportunity for retail success although an interchange is not planned adjacent to the station site. The demand for local-serving retail at the station site is estimated to be 80,000 square feet over the next ten years.

4.4.1 Local-Serving Retail

RCLCo rates the market opportunity for local-serving retail in the station site area as fair in the short term based upon the following criteria:

- Is there sufficient population in the area?
- Are there sufficient traffic counts to support retail?
- What is the projected household growth in a five-mile area?
- How many high-income households are in a five-mile area?
- Are there any indications of unsatisfied demand?
- What is the local transportation access?
- Does the site have visibility?

4.4.2 Local-Serving Office / Service Business

The second development opportunity detailed in the market analysis report is the local-serving office/service businesses. According to RCLCo, the demand for office/service business facilities is from local users, particularly personal business services. Newly constructed or renovated space has been primarily located in downtown Winder. RCLCo anticipates that there will be an increasing, future need for space for this market sector to locate in other areas of Barrow County. As the SR 316 University Parkway, biotech initiative gains speed, ancillary business services, such as copy

services, accountants, package shipping stores, and restaurants, will become more prevalent. Population growth will also spur personal services, such as dry cleaners, day care, and salons.

RCLCo does not advocate locating local-serving office/service space at the station site in the near term. Due to a lack of demand generators in near proximity and the competition with downtown facilities, the report recommends waiting five to ten years to capture this sector of the market. Approximately 20,000 square feet is estimated to meet the demand potential over the next ten years. RCLCo rates the market opportunity for local-serving office/business in the station site area over the next couple years as fair based upon the following criteria:

- Is there access to a workforce?
- Is the cost of doing business inexpensive?
- Is there highway access?
- Is there access to an airport?
- Is the area in an existing core?
- Is there a significant amount of vacant space?
- What is the demand for office/service in the market?

4.4.3 For-Sale Residential

For-sale residential is the third market opportunity included in RCLCo's report. The residential growth in Barrow County, without the biotech success, is predicted to be an extension of existing trends which consist of single-family detached and pre-manufactured housing. Even though two-thirds of the new home sales are reasonably priced between \$100,000 and \$130,000, less than five years ago the majority of new homes were sold for under \$100,000. RCLCo has the following to say about the lot size in Barrow County:

Demand for new housing in Barrow is fueled by three sources: Gwinnett move-outs seeking affordability and a more rural lifestyle; local employment growth; and households splitting commutes between Gwinnett / Atlanta and Athens. Residential product in Barrow is low-density, with lot sizes typically ranging from 1/2 acre and larger. Smaller lot product does exist in western Barrow and eastern Gwinnett, with some lots starting at 1/4 acre. Over time, unless major policy shifts are enacted, Barrow County, particularly western portions of the county, will gradually take on the

character of eastern Gwinnett County, which is characterized as lower-density sprawl (although higher than developing areas of Barrow.)

The demand for new, detached, for-sale residential properties in the station area is estimated to be 76 units annually in the short term and 123 units annually in the long term.

RCLCo rates the market opportunity for for-sale residential in the station site area over the next couple years as fair to good based upon the following criteria:

- Is there access to employment?
- Is there Interstate and/or regional road access?
- Is the site within the local direction of growth?
- Is the site proximate to new construction?
- Is the site close to existing residential?
- Is there access to retail and services?
- Is the site currently an attractive area?
- Is there access to quality schools?

Due to the low prices for complete homes, RCLCo found little desire for attached, for-sale residences. Attached, for-sale residences, such as condominiums, in Gwinnett and Atlanta are reasonably priced, yet higher than \$130,000. Over time, as the Barrow County and the SR 316 corridor become more developed, RCLCo speculates that attached housing will be a more promising market opportunity. Less than 10 discrete condominiums are estimated for the short term.

4.4.4 Rental Apartments

The fourth, and last, market opportunity outlined by the research is that for rental apartments. Currently there are few apartments in Barrow County due to the affordability of the homes. There are examples of rental stock in eastern Gwinnett and western Clarke Counties that are lower-density garden apartments, not urban high-rises. Demand for apartments could rise with increasing house prices and the influx of a younger, biotech workforce over the next five to ten years. With proactive planning in the station area, RCLCo estimates that the demand for rental apartments is 36 units annually in the short term and 46 units annually in the long term.

RCLCo rates the market opportunity for rental apartments in the station site area over the next couple years as fair to good based upon the following criteria:

- Is there access to employment?
- Is there Interstate access?
- Is the site within the local direction of growth?
- Is the site proximate to new construction?
- Is the site close to existing residential?
- Is there access to retail and services?
- Is it currently an attractive area?
- Are there signs of unsatisfied demand?

Based upon evaluating the above listed criteria, RCLCo recommends that the greatest demand around the station area over the next decade should be focused on for-sale, detached, single family housing. Lot sizes should remain large based on Barrow County's current policies and existing infrastructure. Local markets need to be developed before non-residential development is pursued. Also, RCLCo recommends that proactive planning needs to take place to foster the type of development consistent with smart growth. The zoning must be changed to accommodate a multitude of uses, park space should be included, parking should be on-street, streets need to be narrow to reduce vehicle speeds, and sidewalks should link residences with the rail station.

As will be discussed in the development of the straw plan, the results from this report were consistent with trends of the current situation in Barrow County. The intent of the East Winder station area plan is to act as a catalyst to accelerate economic development beyond the extrapolations of existing trends by coordinating the physical development to provide a mixed-use environment which is not available elsewhere in the County. The opportunity for a rail station focuses attention and energy on the planning process and resources to reinforce this possibility. Providing planned housing around good jobs, a school, a town center, green space, and high accessibility requires offering product that is not presently available.

Given that a varied product was desired, it might have been more helpful to produce the market analysis in tandem with the master site design. By coordinating these two efforts, the market analysis could more effectively “test” the feasibility of the site design.

4.5 Visual Preference Assessment

A visual preference assessment is a powerful planning and public participation tool. Instead of using words or text to describe a place, images, either photographs or drawings, are utilized to convey information to a group of people. The visuals help residents, constituents, and stakeholders to better understand land use and transportation concepts and patterns. The images do not tell interested parties *how* to make their communities more livable; rather, they *illustrate* alternatives to the current environment that enable people to be better informed, understand the issues at hand, and, most importantly, be apart of the decision making process to improve their community.

The preference assessment is administered at a public meeting or workshop that has convened for the purpose of discussing land use and transportation planning. Participants are shown slides depicting scenarios with a minimum of one and a maximum of four pictures. Either participants can be asked to pick their favorite while imaging themselves to be part of a different demographic cohort and quickly jot down the reasons why they liked and / or disliked the images or a rating system can be used for a single image. The pictures need to be different enough that the respondent’s favorite is obvious and the rating process is not difficult. The rating system is on a scale from “-5” to “+5” with “0” being neutral. Ten seconds should be given for each slide in order to capture “gut” feelings, and participants should not comment aloud on their choices at this time.

The scores for each scenario are tallied to determine an average or collectively agreed upon image. The pictures receiving the highest positive or negative averages indicate where the group consensus lies. Then, the slides are re-shown, the collective score is announced, and participants are asked to comment on their likes and dislikes for each picture in the scenario. This can become a highly charged and energetic discussion period.

The team administering the visual assessment can point out features and characteristics of the images that may not have been obvious to the participants on first glance. Responses should be recorded to validate the scores. This process is valuable not only for the administering team to better

understand the types of design preferred by the community, but it also allows the community to be involved in land use and transportation visioning and decision making. Having an agreed upon and understood plan can then be incorporated into other community initiatives, such as comprehensive plans or zoning ordinances. In addition, there are often cases in which a planning professional can explain design tradeoffs. Generally residents will choose images illustrating pedestrian oriented environments, but they also might express the need for stores typically found in auto dependent strip malls. The contradiction that these two desires present may not be understood by the participant and can be explained during the discussion period.

A Visual Preference Assessment was conducted as a part of two separate community workshops for the residents of the Winder/Barrow Community as well as local governmental officials. The workshops were held on June 28, 2001 and August 23, 2001 at the Winder Community Center. These workshops were held to gauge public support for smart growth concepts and to understand the types of land use and transportation design preferred. Images with the highest averages would be incorporated into the livable community concept level design. In the presentation, “smart development,” or the type of change that would be needed to create a livable community, was defined as: *the efficient use of land and natural resources with compact communities and mixed land uses, a range of housing and commercial development options, and multi-modal transportation.*

The goal of the Visual Preference Assessment, as developed by Parsons Brinckerhoff Quade & Douglas, was to present livable community design principles and examples to broaden the participants understanding and to measure public support for smart development in rural Barrow County. The consultant team needed qualitative and quantitative knowledge of the residents and local government official’s opinions of viable development types and transportation mode choices.

4.5.1 Methodology

The Visual Preference Assessment was developed using several criteria:

- The presentation, including the rating system and open discussion, should be complete within a two-hour time frame.
- The images used should represent the diversity of lifestyles, ages, and incomes in Barrow County.
- Produce quantifiable results.

- Provide qualitative results.
- Practical for small to large pool of participants.
- Useable for a future workshop.
- Ease of administering.

The methodology used to conduct the Visual Preference Assessment for the two workshops held at the Winder Community Center, included a presentation and two exercises. The presentation was used to familiarize participants with smart development principles and to broaden participants' understanding of national examples. The exercises were developed using an array of images from the smart development presentation depicting various living, shopping, and work place scenarios. The images selected were an assemblage from the consultant image library, and newly photographed examples from communities in both Oregon and Georgia. Images were selected based on the following criteria:

- Indicative of market rate development (based on market study).
- Representative of smart development principles.
- Similar lighting (sunny as compared with cloudy / dark)
- Comparable in composition.
- Representative of a diverse range of development types for residential and commercial uses.
- Representative of a broad range of multi-modal supportive environments.
- Equal number of regional (Georgia) and national examples.

4.5.2 Designing For Livability

The presentation, entitled “Designing for Livability In Barrow County,” listed in Appendix D, poses the question, “What are livable communities?” Several slides were then shown depicting parks and open space, families bicycling down a tree-lined boulevard, and buildings situated close to the street. The opposite question or “What detracts from livability?” was then asked. Grid-locked roads are shown as traffic congestion is one of the most common symptoms that people indicate adversely affects their lives. As the administering team discussed, the three major community components that can affect livability are residential design, commercial design, and transportation system design.

Residential design is explained to positively affect livability through the variety of housing types, narrow streets, sidewalks and planter strips, front porches, garages recessed or in back alleys, and connections to park and natural areas. With a variety of housing choices, families with different needs will be attracted to the area. Images of housing types shown include the following: granny flats, single family houses on small lots, row houses, cluster houses, affordable housing based on the use of the land and/or building materials, and housing situated over retail space.

Commercial design plays a large role in whether an area feels inviting to pedestrians. The proximity of buildings to the sidewalk, the scale of development, presence of street furniture (benches, lamp posts, flower beds, trash receptacles, and bicycle racks), street trees and planter strips, and the mix of land uses contribute to the livability of the commercial areas. Human scale design promotes a more comfortable feeling and people are more likely to stay in an area. Commercial areas tend to provide more enjoyable experiences when there is street furniture. Also, wider sidewalks create more desirable and safer environments for pedestrians. Furthermore, commercial buildings that have entrances close to the sidewalk can make it easier and more desirable for workers or shoppers to enter. Lastly, commercial areas that have residential uses mixed in radiate a feeling of life after business hours.

Promoting livable communities through transportation design means that there needs to be a variety of transportation options and the road system must be safe and pedestrian friendly. Street elements that provide this type of atmosphere include sidewalks constructed of a different material, such as brick, that drivers are more prone to notice, pedestrian islands, landscaping, and clear signage. The design of the street network is also very important. A cul-de-sac design does not promote connections; where as a grid system provides a number of different routes into and out of a neighborhood. This is critical when considering movements of emergency vehicles.

Other elements shown in the presentation are the connections of residential to commercial areas, bicycle lanes and trails, and transit facilities.

4.5.3 Administering the Survey

Following the presentation, *Exercise 1*, located in Appendix E, was administered. Appendix E also contains the rating sheet given to participants. In *Exercise 1*, workshop attendees watched a

presentation that illustrated eight scenarios intended to measure the participants’ opinions from different user perspectives. The scenarios were created to represent the diversity of the County population and to target various development concerns including housing, commercial, and transportation. Represented user groups included: single, young professional without children; two-parent household, both employed, with young children; Atlanta commuter; resident of rail station development; retired senior with reduced mobility; a 14 year old; and a family with school-age children.

Each scenario was followed by a question to be answered by choosing one of three images or collection of images. For example, Scenario 6, described the following situation: *You are a senior who no longer drives and uses a cane to get around. You often walk to the Community Center, which is 4 blocks away.* Participants were then asked to answer the following question: *Which street would be most comfortable for you to use?*

Three images--A, B, and C--, shown below in Figure 10, were then presented that represented three different streetscapes and development types. Image A showed a detached sidewalk with landscaping on both sides and large building setbacks. Image B showed a detached sidewalk with a narrow strip of landscaping on both sides, and a parking lot beyond one of the planter strips. Image C showed an attached sidewalk with potted plants along the street and buildings adjacent to the sidewalk.

Figure 10: Images of Streetscapes and Types of Development



Each participant was asked to choose one image that best answered the question given the scenario and later, during the discussion period, participants commented on their selections.

The discussion period allowed for a lively conversation and in some cases a debate on the needs and preferences of the community as a whole. The comments were recorded for incorporation into the summary report. The exercises were collected at the end of discussion period and were summarized by the team. The “favorite” selections and comments on the example images used in the exercise clearly identify the architectural and development preferences of the community. For the above example, Image C was preferred. Participants agreed that this streetscape created a more pleasant walking experience with opportunities for window-shopping. The streetscape also felt safer with buildings adjacent to the sidewalk and parking and traffic buffered by plantings. One participant added that it looked as if there were places to rest, which would be important for seniors. The summary report and associated images are located in Appendix F.

In *Exercise 2*, located in Appendix G, handouts were once again distributed to the workshop participants. The participants were asked to indicate their preference for certain development types and transportation designs according to their own value system. Sixteen images, such as the one shown in Figure 11, were shown and for each image participants were asked to answer the same question: *Does this type of development promote the livability you desire for Winder?*

Figure 11: Image to Judge Participants Preference for Type of Residential Development



Robert Charles Lesser

Participants recorded their preference for each image using a scale from –5 to 5, 5 indicating preference and –5 indicating dislike, as shown in Figure 12. The columns are the image numbers, 1 through 16. The response number is the participant’s response. For example, Response No. 2 rated Image 1 a “-3.” The averages are listed at the bottom of the table.

4.5.4 Results

The images rated the highest are Image 3, with a 2.9 score, Image 10, with a 2.5, and Image 15 with a collective vote of 2.9. These three images, shown in Figures 13, 14, and 15, represent the participant’s design vision for a livable Barrow County. The images receiving the highest responses were the single family homes, one and two stories, on small lots. Each of these pictures featured other characteristics, such as sidewalks, large porches, white picket fences, and flower planters that most likely added to the residential design appeal. The image type that received high scores was for living space above a retail store or a restaurant which is interesting as this type of development is not currently available in Barrow County. The lowest score was given to an image showing strip, commercial development on a congested street with telephone and power wires above the street.

A discussion followed this exercise to provide participants with an opportunity to share their comments on each image. Comments from the Exercise 2 discussion period were also recorded and collected at the end of the discussion. The summary report is located in Appendix H.

Figure 12: Results From Exercise 2

	A	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Exercise 2																
2	Visual Preference Assessment Results																
3	Barrow County Livable Communities Workshop #1A																
4	Responses																
5	Response No.	Image 1	Image 2	Image 3	Image 4	Image 5	Image 6	Image 7	Image 8	Image 9	Image 10	Image 11	Image 12	Image 13	Image 14	Image 15	Image 16
6	1	-5	-2	1	-5	-1	-5	-3	-5	-3	-2	-5	-4	-2	-2	1	-3
7	2	-3	0	2	-2	0	-5	-2	-3	-2	1	-4	-2	-2	-1	1	-2
8	3	-2	0	2	-1	0	-5	-1	-2	-2	2	-3	-2	1	1	2	-1
9	4	-2	1	2	-1	0	-5	0	-2	0	2	-2	-2	2	1	2	0
10	5	-2	1	2	0	0	-5	0	-1	2	2	-1	0	2	1	3	0
11	6	-2	2	3	3	0	-4	0	1	2	3	1	0	3	1	3	1
12	7	-1	2	3	3	3	-3	1	1	2	3	1	1	3	2	3	2
13	8	0	2	3	3	3	-3	2	2	3	4	2	2	4	2	4	3
14	9	0	3	4	4	3	-3	2	2	3	4	2	2	4	2	4	3
15	10	3	3	5	5	3	-3	2	3	4	4	3	2	4	3	4	5
16	11	4	3	5	5	5	-3	2	4	5	4	5	3	4	4	5	
17	Response Averages																
18		-0.9	1.4	2.9	1.3	1.5	4.0	0.3	0.0	1.3	2.5	-0.1	0.0	2.1	1.3	2.9	0.7
19	Note: Response numbers do not correlate to a specific participant.																

Figure 13: Image 3



Figure 14: Image 10



ert Charles Lesser

Figure 15: Image 15



Several concerns were identified during the public workshops pertaining to quality of life for the Windsor community. The participants were supportive of a livable community that provided them with housing, commercial, and transportation development options. The knowledge gained by the consultant team was invaluable for the straw plan design. The housing, commercial, and streetscape type preferences will be reviewed again in the straw plan section of this report.

5. Technical Issues Surrounding the Proposed East Winder Rail Station Area

5.1 Technical Workshops

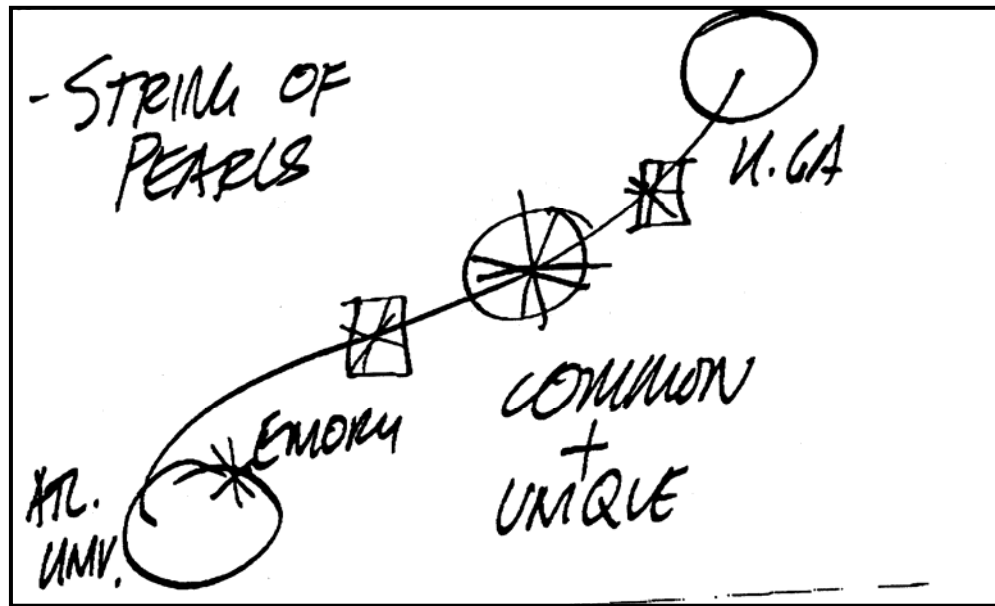
The second workshop identified in the work plan is a technical workshop. Following the Community Workshop, additional information was required to layout the livable community plan. Even though the proposed East Winder rail station location had been agreed upon, there were numerous questions as to the characteristics of the surrounding area to investigate. Technical expertise and local knowledge was required to move this project into the architectural design phase.

The technical workshop was phased into two, full day sessions in Athens and Winder, referred to as Technical Meeting Phase I and Phase II, respectively. Information ranging from the rail platform design, to facility needs for the biotech community, to the depth and reputation of the Barrow County school system was needed. With the agreement of the Georgia Rail Passenger Authority, the Team invited technical experts and locally elected officials, but not the general public to the sessions, due to the sensitive nature of siting the livable community. Individuals, including Barrow County Commissioners, biotech scientists, economic development professionals, land use planners, and members of the local Department of Community Affairs, to name a few, were contacted and brought together for the Phase I and Phase II workshops. In addition to these two sessions, several other meetings were held in Atlanta, at the consultant's office, to further address issues about the CSX rail line, platform design, and water infrastructure that would be needed to serve a livable community.

5.2 Visual Programming

A communications technique called Visual Programming, perfected by the Sizemore Group, was used during the Phase I and II workshops as well as the in-house meetings with technical experts. Visual programming involves the “sketching” of thoughts, ideas, and explanations of complex processes shared during a group session on 5-inch by 8-inch, white cards. After an idea is illustrated on the card, typically through words and pictures, it is shown to the idea contributor to verify that the correct meaning was captured. The card shown in Figure 16 illustrates an idea developed at the Phase I session.

Figure 16: Visual Programming Card



The line drawn on the card represents the CSX rail line connecting the University of Georgia to Emory and other Atlanta universities. The stars bordered by circles and squares represent the rail stations and potential sites for development. Each station area will have unique and common characteristics. The uniqueness may be a certain economic development focus, while the commonalities might refer to the density of housing and amount of retail offered within a walking distance from the station. E.H. Culpepper, GRPA Vice Chairman and Development Director of the Classic Center in Athens, termed this design as the “string of pearls” - each station being a pearl strung together by the rail line to create the corridor. The resulting “string” would be an entity more economically viable than unrelated development projects.

According to the Sizemore Group, the Visual Programming process is inclusive, drawing out the thoughts of people involved and also providing recognition for their contribution. The cards are hung on the wall, as shown in Figure 17, and the “carding process” looks like an open, creative, brainstorming session. After each workshop, the cards were organized into different categories: Goals, Facts, Concepts, Needs, and Issues. Displaying the cards in these categories creates a story about the project. The cards can easily be displayed at other meetings, providing a history and sense of work accomplished on the project. See Appendix I for the cards produced during the technical sessions.

Figure 17: Technical Workshop Phase I, Picture of Visual Programming In Process



5.3 Characteristics of the Rail Station Area

The following section details the technical aspects of the site and of the surrounding area that will affect the placement and characteristics of the livable community. This information was gained through both technical workshops phase I and phase II and also smaller meetings held with technical professionals in specialized fields. Meeting minutes from these sessions are included in Appendix J.

5.3.1 Land Use

The land use classification, of type agricultural, residential, commercial, industrial, government, vacant, and so on, is general in nature, but has broad application. Many planning agencies have land use maps from varying years, such as Figures 18 and 19, indicating changes in development patterns over time. In addition, cities, counties, metropolitan planning organizations, and states are creating Geographic Information Systems (GIS) data that is given or sold based on the nature of the data request. Land use is a GIS dataset that many organizations and companies utilize for a variety of



purposes, such as calculating the percentage build-out of an area, the proximity of water and sewer infrastructure to residential and commercial areas, or the percentage change of use classification in an area over time. A parcel based, land use GIS dataset was acquired from the Northeast Georgia Regional Development Center (NEGRDC), as displayed in the Figure 20, map below.

Figure 18: Year 1998 Existing Land Use Map for Barrow County

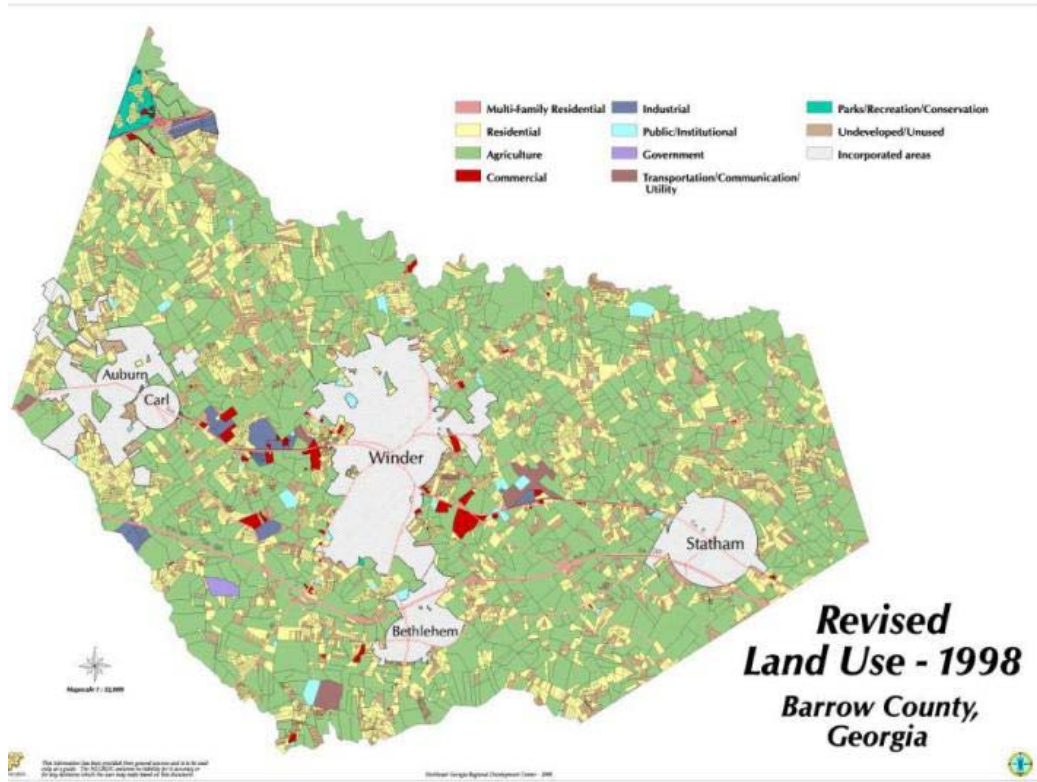
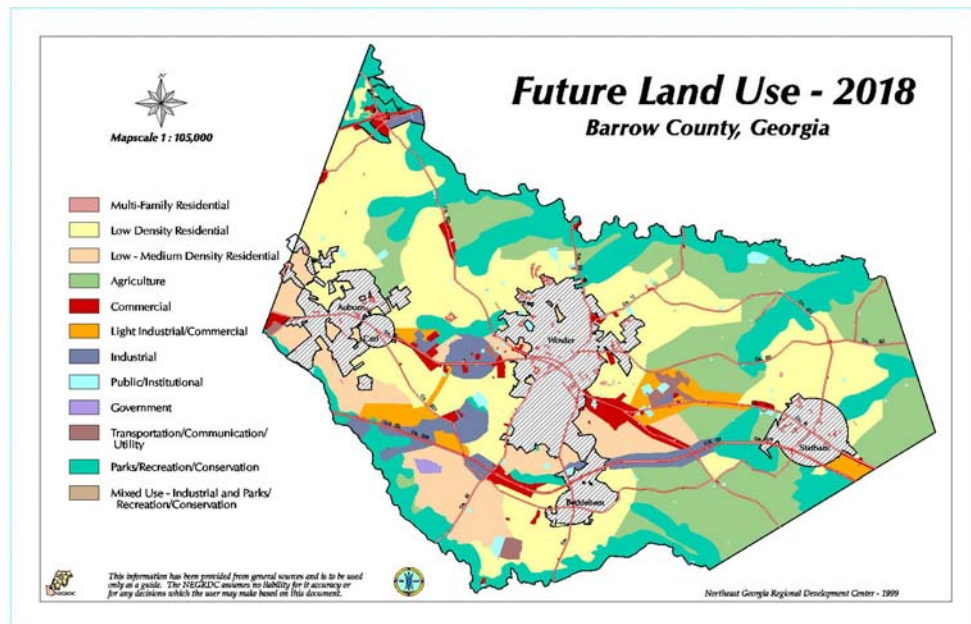
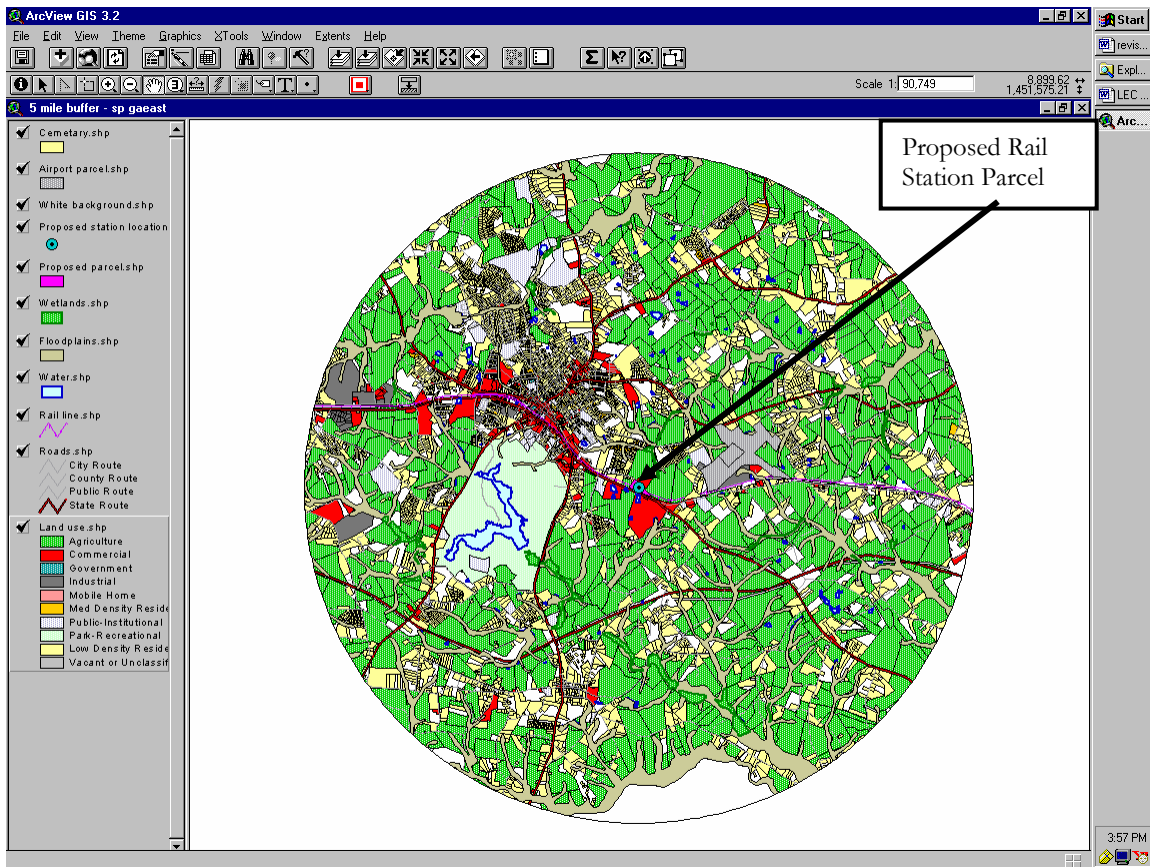


Figure 19: Year 2018 Future Land Use Map for Barrow County



As is evident from the Figure 18, above, Barrow County's 1998 existing land use plan, a large portion of the County remains agriculturally based. Figure 20 illustrates a 5 mile buffered area around the station parcel. This GIS map shows the land uses inside of Barrow's incorporated cities and therefore more clearly demonstrates that the residential properties, shaded yellow, are scattered and the commercial uses, colored red, are focused north of Fort Yargo State Park, in downtown Winder. Residential use is almost exclusively single-family homes, with a few apartments in the downtown Winder area. Elected officials said that the number of rental properties in the County was insufficient to meet the demand, and renters were locating in nearby Gwinnett and Athens Counties instead of Barrow County.

Figure 20: Year 2000 Existing Land Uses In A Five Mile Buffered Area Around The Proposed Rail Station Location



It is important to note that the section of land north of the rail station parcel was originally selected as a prime location for the livable community site. This area has been developed in the last year as a residential subdivision. According to the book entitled *Blueprints for Successful Communities* “Workshop 6: University Parkway And Atlanta –Athens Rail Corridor,”^x the biggest change in land use over the next twenty years will be the addition of more than 8,000 acres of residential development. The future land use plan, in Figure 19, validates this assertion. Much of the agricultural land in the 1998 Plan is color coded single, low density residential in the Year 2018 Plan.

Commercial building since the mid-1990’s has resulted in a strip center just west of the proposed rail station parcel. This shopping mall, buffered from the road by a large parking lot, includes a Wal-Mart. This property remains the only “big box” type of development, outside of downtown Winder, that is in close proximity to the proposed rail station.

5.3.2 Zoning

Similar to land use, zoning classifications provide information about what activities can occur on a property. Zoning differs from land use because the classification cannot be changed without an appeals process controlled by the jurisdictional planning group, be it the county planning department or a special zoning office. The manner in which a jurisdiction handles zoning can be an indication of future development patterns. Whether an area will be planned or sprawling can be attributed to the stringency of zoning regulations and the degree to which they are enforced. Jurisdictions with active zoning laws have a mechanism to control development that is not deemed in the area’s best interest based on type or proposed location. Zoning can also have a strong, positive affect by providing developers with a market edge. If a county only has two areas zoned appropriately for large commercial centers, then there will be less competition as compared with a situation in which developers can locate properties where they choose.

In addition to zoning being a powerful mechanism to control development patterns, it is also necessary to have the correct zoning classification for a livable community. A wide variety of land uses, ranging from residential, commercial, office space, perhaps back office type development, and possibly an industrial facility may be developed. Even if the livable community is in an urban area,

zoning will need to be addressed. One method is to create a special overlay district that can accommodate a myriad of uses.

The tax accessors data from the Barrow County Appraisal office was acquired. This information came in the form of a database, listing the parcel identification number and characteristics of the parcel, such as the zoning classification, size, last date of purchase, sale price, owner, and structure characteristics, if existent. In order to correspond the parcel identification number with the parcels in the area of interest, the tax accessors office was visited. Map numbers 91, 92, 93 cover the station area in unincorporated Barrow County. The majority of the parcels on these maps are zoned agricultural or agricultural with a residential structure. Figure 21 shows a portion of tax map 91.

Figure 21: A Portion of Tax Map 91 for Unincorporated Barrow County



5.3.3 Environmental Characteristics

The environmental characteristics surrounding the station site play a critical role in determining where and what parameters need to be taken into consideration to plan the site, size, and layout of the livable community. At the minimum, an environmental review needs to be preformed before site selection. In the event that there is an environmental issue or a fatal flaw, it will be advantageous to

either move the site or determine a mitigation strategy. Characteristics to consider could include, but are not limited to, the following: topography, social and community resources, environmental justice, air quality, noise, ecosystems, jurisdictional waters, floodplains, farmlands, historic resources, and archaeological resources.

In addition to site visits, there are numerous data sources to aid in an environmental review. Sources such as USGS topographic maps, GIS data available from the Northeast Georgia Regional Development Center (NEGRDC), and the Georgia GIS Clearinghouse will be helpful in locating terrain contours, waterways, wetlands, and cultural resources, such as cemeteries. It may be necessary to hire a specialized firm to provide a full assessment of the area, including soil tests, noise analysis, and archaeological resources.

A cursory review was made of the environmental characteristics for the East Winder station site. During the technical phase I meeting, questions were posed about the existence of a wetland, north of the station site. Other relevant information includes the presence of the cemetery just east of the station, the Richard B. Russell historic home on the parcel across SR 8/53 from the station, a steep ridge and drop off to the north-east of the station, and the suspected brownfield also across SR 8/53 from the station. Several years ago, de-lining of cotton seeds took place on this property and the chemicals have contaminated the ground, leaving a foul odor in the air, and making residents suspicious of the distance which chemicals may have traveled through groundwater. Government assistance will be required to clean up this pollution problem. Consequently, this parcel may not be on the market for some time.

Open space is an environmental advantage to this area. Fort Yargo State Park is southwest of the station site. There is a golf course across SR 8/53, just to the east, of the site, and a public golf course is being built just south of the station site. Some residents and businesses will need to be relocated to accommodate a new development.

5.3.4 Water and Sewer Infrastructure

Through discussion with water management professionals at Keck & Wood, Inc., Morgan Keegan & Company, Inc., and Thompson Company, Inc. as well as Eddie Elder, the Barrow County Elected Chairman of the Board of Commissioners, it was learned that Barrow County allows development on

only acre plots, or larger, due to septic system requirements. The County's 600,000 gallon sewer system is estimated to be at 80 – 90% capacity, and the near-term needs may stretch the system to the limit. It is unlikely that the current system can accommodate a new development with several hundred households, commercial, biotech laboratories, and a school. With each residential unit using approximately 300 gallons of water a day, the wastewater treatment facility would, at the minimum, need to accommodate on the order of 100,000 gallons at the first stage of development. A treatment plant, reportedly, is not efficient unless it has close to 250,000 gallons a day to process.

Due to the saturation of the current system and the need for the mixed-use component of the livable community to be developed at a higher density than the standard, thought will need to be given to whether a new wastewater treatment plant could be built, and who would own, operate, and maintain it. The firms named above have suggested that the wastewater and water services should not be separated due to the fact that wastewater is not a high moneymaking operation, and there is not a tap to turn off wastewater.

In addition, the above named firms suggested that if a new wastewater treatment plant were to be built, the revenue stream would need to be fairly certain. Five scenarios are discussed below, but are by no means the only ways to finance a new system in Barrow County under shared arrangements. One scenario is that the state could fund the sewage service and invite the county to buy into incremental increases in capacity. The plant could serve as the drainage basin for the entire county. If the state issues the money up front, then a revenue bond could be floated for the county to purchase the service from the state.

The second scenario is that the state could enter into a contract with a private developer and guarantee a revenue stream. If the county desired to have some incremental value in the system, they could be given the opportunity to participate as well. Thirdly, the state could build the plant and then lease or sell it to a private company. This would be a guaranteed revenue stream and would take advantage of the efficiencies of the private sector.

An alternative, fourth solution would be to use a mechanized system for each residential unit or each neighborhood block. This system might be ideal if there was not enough wastewater to operate an entire plant, especially for the first phase of build out. There would be several tanks located

throughout the livable community that would need to be emptied on a periodic basis. The tanks sort out the more solid matter, and the remaining effluent is very liquid and can be distributed through ½ inch diameter plastic tubes for irrigation. It is also important to note that the effluent, otherwise known as “gray” water, or sewage cleaned to a certain standard, is acceptable to use for irrigation purposes. This is a sustainable way to re-use this water. The livable community will need buffered zones of vegetated area that can be irrigated below the soil with gray water. The amount of land that we understand to be necessary for this purpose is approximately 800 acres per one million gallons a day or 200 acres per 250,000 gallons a day. This water could also be sprayed on the golf courses or the park. It is important to note that since this development is tied to the rail station, the land value will most likely be higher than that elsewhere in the County and the developer should be able to put a higher fee on the tap. This cost will be passed along to the buyer. After the market is proven, one of the other scenarios might be more appropriate and efficient.

Fifth, as suggested by the economic development professionals in technical meetings, a jurisdictional body could be the provider of the infrastructure, such as water, sewer, natural gas, and telecom, for the Linear Research Park area. A twist on the above scenarios would be to submit the project for federal or state environmental pilot project status and recognition. The most recent water management technologies could be applied given federal and / or state funding assistance.

In terms of drinking water, Barrow County is in a different situation than it is for wastewater. The City of Winder presently provides drinking water to the majority of the county. The Barrow County Water Authority serves isolated pockets in the west and east portions of the county. Recently, the county has begun to lay pipe in the northern and southern portions of the county to relieve some of the burden from the City of Winder. Whether the City of Winder or Barrow County provides drinking water, supply is not presently an issue.

5.3.5 Transportation Access

The issue of transportation access is a critical one in planning for a rail-centered community and must be evaluated from a macro as well as a micro perspective. From a regional viewpoint, the proposed rail passenger station is located approximately twenty miles west of Athens, two miles north of SR 316, and two miles east of the City of Winder, along SR 8/53. The Gwinnett County border is approximately ten miles to the west and is accessible by either SR 316 or SR 8/53. SR 11,

just west of the station, provides access to I-85 to the north and SR 78 and I-20 to the south, in Walton and Newton Counties, respectively. Downtown Atlanta is about fifty miles southwest of this area. In addition, the proposed commuter rail will link Barrow County with Oconee and Clarke Counties to the east, and Gwinnett, DeKalb, and Fulton Counties to the west. Express bus service has also been proposed to complement the passenger rail service, providing an additional transportation alternative in the corridor.

Barrow County's dual-runway airport is directly east of the proposed station. Discussion over adding a third runway and changing the angle of one of the existing runways has taken place. If and / or when this project would commence is unknown. Another future project, the proposed Winder Bypass, has been in the County's plans for several years. The location of the proposed Winder Bypass has changed, but the County's current plans show the Bypass positioned between the rail station and the airport. The Bypass will provide an alternative route, especially for truck traffic, between I-85, to the north, and I-20, to the south. The Bypass is intended to alleviate congestion on roads, such as SR 11, and reduce truck traffic in the City of Winder. Access to the Bypass is planned for two locations near the proposed passenger rail station; the intersection with Hog Mountain Road, south of SR 8/53, and the intersection with Pickle Simon Road, close to the airport. SR 8/53 does not have access to the Bypass. The Georgia Department of Transportation has estimated traffic counts for the Bypass to be about 11,000 vehicles in 2023 as shown in Appendix K. The measurement of this count is average annual daily traffic (AADT) that includes a seasonal variation factor, increasing its validity over counts taken for a limited time period.

Questions have been raised regarding whether the current roads can sufficiently accommodate the additional traffic volume, especially in peak periods, that the planned passenger rail station and community will create. As described above, SR 8/53, a two to four lane road, is directly south of the station. Midland Avenue, a local road, curves around the station site, intersecting SR 8/53 on the eastern end and continuing west into downtown Winder where it changes its name to Fifth Avenue. Traffic counts from the Georgia Department of Transportation year 2000 show approximately 9,000 AADT on SR 8/53.^{xi} The congestion level on SR 8/53 becomes obvious when the 9,000 AADT is compared with that of SR 316, just over 18,000 AADT. In comparison, SR 316 is a four to six lane road that has fewer intersections and no driveway access. State Route 11, which connects SR 316 with SR 8/53 and borders the eastern side of Fort Yargo State Park reports 8,500 AADT. See Appendix L for a listing of these roads and counts.

In addition to indicating the level of service on a road, traffic counts are important indicators of the success of retail development. One planning guideline says that 15,000 vehicles per day must pass a retail area for it to have a chance at success. Presently, SR 8/53 does not have this much traffic; however, with the Bypass, the upgrade to Midland Avenue, and the development of the livable community, vehicles will be added to the area.

Barrow County has planned and approved an upgrade to Midland Avenue, the road directly north of the station site. The upgrade will stretch the entire length of the road and will include vehicular and pedestrian enhancements. Midland Avenue will also be extended to tie into Pickle Simon Road, the airport service road. The proposed Bypass will go over Midland Avenue and access will not be provided from Midland Avenue onto the Bypass.

It will be imperative that a traffic engineer be involved in the development of the livable community to confirm the vehicles generated by this new development will not further degrade the level of service on existing roads. Retail and office space will bring shoppers and workers to the area. In addition, new travel patterns will result from the new development. The livable community should not serve as a cut through with commuters speeding through the main street to arrive at the rail station in time to catch their train. These issues will be further examined as the design of the livable community takes shape.

5.3.6 Pedestrian and Bicycle Issues

It should also be noted that aside from the planned pedestrian upgrades for Midland Avenue, the roads in the proposed station area are not bicycle and pedestrian friendly. It is currently not safe to walk or bike from downtown Winder to the station area. SR 8/53 does not have shoulders all the way into the City of Winder, has a high percentage of truck traffic, and has numerous driveways. These characteristics indicate that these roads were planned solely for vehicle traffic.

5.3.7 At-Grade Crossings

At-grade crossings, the intersection of the road and the rail line, are usually protected by visible flashing lights, an audible bell sounding, and barrier arms. These intersections remain dangerous, as the possibility exists for a vehicle or individual to be hit by an oncoming train. Currently there is an

at-grade crossing at Midland Avenue, but this will be eliminated when Midland Avenue is upgraded and extended to intersect with Pickle Simon Road instead of SR 8/53. According to a study completed by the Georgia Rail Consultants, at-grade crossings are also located at the intersection of Chapel Church Road and SR 8/53, to the east of the station site, the intersection of a private road and SR 8/53, just west of the station site, Russell Cemetery Road and SR 8/53, to the west of the station site, and the intersection of Pine Street and SR 8/53, close to Fort Yargo State Park. Presently there is no plan to close these grade crossings.

5.3.8 Station Parking

The proposed passenger rail station parking lot is another element of the transportation system to be considered. The size of the lot is based upon the estimated rail ridership, or the number of riders who will board and alight at the station. The ridership numbers were increased by a third to provide a “worst case” scenario to estimate the number of needed parking spaces. For year 2025, the Athens to Atlanta Environmental Assessment calls for 860 parking spaces at the East Winder station.^{xiii} This is important information in order to find a suitable place for the parking lot in close proximity to the station. It is important to consider how a planned community could help decrease the number of rail riders driving to the station. If an intensely developed community is created with a pedestrian friendly transportation network, the number of parking spaces will decrease. Other modes including kiss and ride and shuttle service from downtown Winder could be implemented to additionally decrease needed parking.

5.3.9 Rail Platform and Station Design

Understanding the platform and station design is important to determine the best way for riders to enter and exit the train and leave the station area, on foot, bicycle, or by a vehicle. The most basic form for the station would be one that provided a platform and shelter from inclement weather. This is all that is needed; however, having the livable community in near proximity to the station provides the opportunity to integrate the station into the community, offering such services as day care and dry cleaning for example.

The current design for the platform specifies that it will be the only structure within the railroad right-of-way due to liability issues. The right-of-way is 100 feet with the rail line in the middle; however, it is believed that the road is in the right-of-way close to the Winder station. There is not a

need for double tracking at this station. The platform will be low, only nine inches above the rail. The train is a push-pull operation, being pushed to Athens and pulled to Atlanta. Doors will exist on both sides of the train to handle boarding and alighting in either direction. In addition, the train may be a double-decker, but access is only allowed through the first level. Due to federal guidelines, all of the doors need to be handicap accessible, but the first car behind the locomotive will be encouraged for handicapped access so the conductor can provide assistance. The vertical clearance level for a passenger train is twenty-five feet and twenty-eight feet for a freight train.

5.3.10 Station Barriers

Another element of the station is landscaping to buffer and control the movement of people around the tracks. In addition to trees and shrubs, a fence may be necessary to run the length of the platform to prevent people from jumping the fence to reach the platform. A bridge may be needed to move riders over the tracks. This is an important element to tie the rail station in with the livable community, depending on the site location. It has also been suggested that another entity, such as a church, could make use of the rail station parking lot on the weekends as the commuter service is planned for weekday operation.

5.3.11 The City of Russell

The proposed passenger rail station is currently located in unincorporated Barrow County, but less than a decade ago, this parcel resided within the boundaries of the City of Russell. Russell was situated between the City of Winder and the City of Statham. According to the Northeast Georgia Regional Development Corporation, Richard B. Russell, Jr., served as governor of Georgia and as U.S. Senator from 1933 to 1971. His father, Richard Russell, Sr., was Chief Justice of the Georgia Supreme Court from 1922-1938 and swore in his son as governor. Richard Russell, Sr. rode the train to Atlanta to reach the courthouse. This piece of Georgia history could be woven into the livable community, perhaps by naming the area after the Russell family, to carry on the tradition.

5.3.12 Jurisdictional Issues

In addition to the discovery of a City that lost its charter, several other important jurisdictional issues have been discussed during the technical meetings. First, technical experts have discussed the benefits of having one jurisdictional body provide infrastructure, such as water, sewer, natural gas, and fiber network cable, to the Linear Research Park corridor. This scenario allows for coordination

between developments instead of having numerous, smaller, unrelated programs trying to achieve the same goal. If the jurisdictional body was comprised of the corridor counties, they could collectively reap the benefits of this partnership and distribute the losses. This is no doubt a long-term scenario, but it is one that would provide this area with a significant economic development edge. A one-stop shopping package, in which a company would work with one jurisdictional agency, could help entice biotech companies to choose Georgia over other states and the Athens to Atlanta corridor over other regions of Georgia.

Another suggestion that needs mention was for the livable community to have its own jurisdiction, including police and fire, community governing body, and infrastructure provider, similar to a Disney theme park. The community would need to be sized to warrant the creation, instead of sharing, these services.

5.3.13 School System

Barrow County has four public schools: two elementary schools, one middle school, and one high school. Bethlehem Elementary, Westside Middle School, and Winder-Barrow High School are the closest schools to the rail station area. According to the Georgia Department of Education for the 1999-2000 school year, Bethlehem Elementary was ranked in the average, at the 50 percentile, of all Georgia elementary schools, and Westside Middle School and Winder-Barrow High School were reported to be in the top forty and thirty-three percent, respectively. Another elementary school, Appalachia Elementary School, is currently under construction.

A school is an important component of a planned community for several reasons. There are examples of successful planned communities, such as Disney's Celebration, in which the school has played a critical role. According to Mike Sizemore of the Sizemore Group, when the Celebration residents were asked what were the two most important factors in their choosing this community, the number one answer was the town center and the second reason was the school system. First, the influx of families into the area can strain the current school system, lowering teacher to student ratios and quickly depleting limited resources. Secondly, the school system remains a top factor for young couples and parents to consider when moving. The opportunity to provide their children with a better education or access to a specialized school can be a big draw. Lastly, Barrow County is historically a mill-town county, and a need exists for adult education. The Barrow County Chamber

of Commerce expressed that the County has a great need for performing arts and extracurricular classes. A new school is a community resource, with fields that can be used as open space and classrooms for continuing education classes.

Another option would be for the school to be private or a charter school which may result in the student population being drawn from a larger regional area. Not integrating with the public school system alleviates the situation of an additional school straining the county system. Also, if the school in the livable community is not large enough in future years, children could end up being sent to other county schools. This situation would present a myriad of problems for current and prospective livable community residents as well as the school board.

According to public school planning guidelines, close to 3,600 residential units must be added to the community before a new, public elementary school is justified. Approximately 10,000 units are needed for a new middle school, and 18,000 for a high school. Five acres, plus an additional acre for every hundred students, are needed for an elementary school. Twelve acres, plus an additional acre for every hundred students, will be required to build a middle school. Similarly, twenty acres, plus an additional acre for every hundred students, is necessary for a new high school. The developer should donate the land for the site. And since a time lag exists between new development and the time when children enter the public school system, this gives the community a few years to raise money from the property tax revenue.

If the development becomes a bedroom community, the importance on quality education will be higher. There are numerous student teachers who are currently participating in the Barrow County school system. The close proximity to the University of Georgia, Gwinnett Technical College, Emory University, and the Georgia Institute of Technology open up opportunities for a new school to have a specialty, such as math and science, and for the high school to be a magnet for one of these universities. The possibility also exists for the school to be a privately operated which may result in the student population being drawn from a larger regional area.

5.3.14 Bio-Technology As A Community Component

The expansion of the bio-science industry is being carefully watched and actively pursued by Georgia's economic developers and policy makers as a possible next statewide initiative. Deep roots

in bio-technology exist at Georgia's universities, Emory and the University of Georgia, in particular. Renowned researchers and scientists are involved in cutting edge technologies, and the competition for federal funding is fierce. Decision makers are looking to the schools in Metro Atlanta, Athens, and SR 316 corridor to help fuel a plan for furthered growth in this arena. Synergies exist between these schools and the SR 316 corridor links the major entities. An opportunity exists for Georgia to capitalize on this strength, develop, and market itself as a leader in this industry.

Products coming out of biotech companies take longer to get to market than other industries due to the multi-staged testing and federal approval process. This time and capital intensive process can be threatening to investors, and there are sobering tales of bio-tech companies struggling through their incubator stage. A joint effort between public and private entities could bring needed assistance to these young companies. The public sector could provide free or nominally priced access to lab equipment, facility space, ties to universities, and infrastructure, such as water, sewer, gas, fiber network cable, and property taxes.

Relationships with and a close proximity to a university, as mentioned above, are critical factors that a biotech company would take into account when choosing a location for the incubator stage. Professors and post graduate students are often part time employees and teaching responsibilities would prohibit a long commute to campus. Facilities often need to meet "good manufacturing practices," or GMP requirements, in order to meet federal regulations. GMP can include, but is not limited to, clean rooms, purification rooms, purification columns, capacity to grow bugs, and fume covers.

Fifty-thousand square feet was suggested as an ample size for this type of facility. The number of building stories is not a critical component. Having a clean, commercially zoned, inexpensive space is essential. According to Margaret Dahl, a bio-tech researcher at the University of Georgia, the current price of this type of space in other large cities is \$360 dollars a square foot. There are not enough GMP labs to meet the global demand; Georgia only has one such facility, a 10,000 square foot lab in Athens. At the next stage in the company's maturation, a pilot plant will be needed. The process to locate a site, create the building design, and construct the plant can take two years. If space existed that could be converted into a pilot plant, instead of starting from scratch, this would be a significant advantage. A manufacturing plant is the final facility for the company to get its

product to market. Having the right kind of facilities, for companies at each stage of their development, is critical for the position Georgia is working towards in the biotech industry.

Young bio-tech companies would benefit from transportation access, including close proximity to an international airport, a skilled labor force at different levels, and high standard of living for employees. Researchers and scientists often work together in teams; they are not solo workers as is possible in the software development environment. The advantages associated with a bio-tech location in the Athens to Atlanta corridor were resoundingly positive. Such characteristics of this area include the following: easy accessibility to Athens, light traffic if coming from Atlanta, position between two urban areas with benefits of smaller town living, talented pool of employees, synergies with other bio-technology research and work, affordable housing, access to transportation to move people and goods, and open space.

A critical economic development component to the biotech industry is the quality of the school system. As mentioned above, scientists will demand a high standard of education for their children. However, there is another side to this issue to consider. The labor force needs to be educated in other aspects of the bio-tech profession besides the pure science component. Opportunities exist to expand traditional degree as well as advanced business and law programs to include a regulatory affairs component as this industry is steeped in federal oversight and regulation.

5.3.15 Real Estate Analysis

According to Mike Sizemore of the Sizemore Group, the design of a real estate development **must** be integrated with economic analysis or the design will not be built as planned or built at all. Financial analysis is a far more complicated activity than can be addressed here. However, one must understand or gather information from others before assuming market and price decisions that will work. This analysis consists of a series of calculations which are integrated and therefore interrelated. One may start with numerical assumptions, then follow the impact of these assumptions on other calculations, and end up determining if the original assumption will work. It usually does not, and so this calculation will likely be recycled many times.

For example, the design shows several types of housing at various densities. Some of the housing is shown on land which is not owned or controlled by the people generating the design. Without the

land control, the project will not happen. Land control requires either ownership, cooperation of the land owner, or as a last resort, condemnation and taking of the land. In any of these cases, the future potential value of the land will need to be calculated to determine density, site and market approaches, and feasibility. Beyond the future potential value, the present owner may not want to sell it. The starting point is to see if the future value will be enough above the current price to cause the owner to sell.

To further this example, assume the following allocations with rounded off numbers:

- Building Construction 65%
- Site Development 10%
- Land Development Infrastructure 10%
(roads, sewers, power, water, sidewalks, parks, golf courses, community buildings, etc...)
- Soft Costs 10%
(legal, finance, architecture, engineering, planning, and landscape architecture, etc...)
- Sales and Marketing 5%

If the markets exist for homes with a \$150,000 sale price, then the developer will set a profit goal, twenty percent (20%), of the sales price would be normal, \$30,000 per house. Of the \$150,000 sales price, \$120,000 is left for development costs. Building Construction costs would be 65% of this \$120,000, or \$78,000. If competition in the market requires the \$150,000 homes to provide 1500 sq. ft. of space, then the construction budget per square foot is \$78,000 / 1500 sq. ft., or \$52 per square foot.

- Determine if this budget will provide the quality necessary to sell the house to the selected market?
- Will it be possible to build it?
- Will it be easy without much risk? Or, will it be tight and risky? If it looks risky, inevitably we look at land cost and land development cost.
- Is a land purchase and land development price of 10% (\$15,000) plus 10% (\$15,000), or 20% (\$30,000 per house site) realistic?

If these numbers look initially realistic enough to pursue the project further, then consider how much budget this land allocation will provide to enable you to purchase the land. In a plan that contains four houses per acre, the four homes would provide $4 \times \$15,000 = \$60,000/\text{acre}$ with which to purchase the land. If land in the area is selling for less than $\$60,000/\text{acre}$, then you might proceed to the next step.

Other questions that need to be considered are the following:

- Can site development for $\$60,000/\text{acre}$ be provided to meet your initial budget?
- Will the local government provide some of this infrastructure development? Can they be trusted to actually do it, at an appropriate time?
- Is it a possibility that the property will be need to be held longer than expected? If so, what is a reasonable time frame?

In this “back of the envelope” calculation, it becomes evident that the land and land development budget totals about $\$120,000/\text{acre}$. If the land owner wants more for the land or the land development costs increase, then you must do a combination of the following:

- Raise the sales price of the houses to get more income and possibly push the market.
- Build more units per acre.
- Reduce construction and other costs.
- Get the government help to pay for infrastructure and site development.
- Get the land owner to drop the price.
- Reduce contingency and accept higher risks.
- Have the government condemn the property if you are sure it appraises at a low value and you can risk going to court.
- Forget it and move on.

If the property needs to be rezoned, then an entire other set of variables enters the process.



It is sobering when one considers the potential complexity of securing land control at a price appropriate for a particular use. A mixed-use, mixed income project becomes much more complex. This is the major reason why it does not happen more often.

There is a valuable role that the public sector or a Master Developer can play in providing the town center plan with the land already zoned appropriately with the land purchase price already set for development by a developer. Most of the risk is removed from the developer. Therefore, the developer can reduce the risk contingency and provide the product at a lower cost.

These feasibility issues are at the heart of the development process and a plan that does not consider these issues can be irrelevant, not capable of implementation, a disappointment, or a failure.

The above listing of issues are important to best plan the livable community in a manner that takes advantage of the site characteristics, creates synergies, and minimizes and / or mitigates downfalls of the site.

6. Development of the Straw Plan and Master Plan

6.1 Introduction to the Straw Plan

The straw plan is an architectural concept drawing that is intended to be a representation of the community's needs, values, and ideas. The process to develop the straw plan can be likened to that of the scientific process to develop a hypothesis, test it, and form a theory. Similar to the scientific process, a hypothesis was offered based on our objective to create a plan for a livable community in close proximity to the proposed East Winder passenger rail station. Research was then conducted and input gathered through the market analysis report, visual preference assessment, and visual programming techniques; this information helped clarify the design opportunities and challenges that the straw plan would need to address.

The straw plan was “tested” with peers, colleagues, and stakeholders to ensure that the community's vision and physical realities for the new site had been correctly interpreted. This testing process happened at the technical meetings and informally with other stakeholders. In addition to using the

Visual Programming cards to discuss the issues surrounding the project and development of the straw plan, traffic counts on county roads and aerial photography were also displayed and discussed. The traffic counts, as mentioned in the technical information section, validate the placement of retail stores. With over 9,000 AADT on SR 8/53, a two-lane road, as compared with the 18,000 AADT reported for SR 316, sufficient traffic flow exists to warrant the placement of retail shopping in the livable community, most likely facing SR 8/53 and on the main street. The future Bypass will further increase traffic volume in this area in addition to other developments in the Linear Research Park.

High-resolution aerial photography proved invaluable in envisioning how the livable community related to the topology of the area. The aerial imagery, used for presentation and to determine the Community's boundaries, is located in Appendix M. These materials, along with information on the land uses, parcel boundaries, environmental concerns, market analysis, Visual Preference Assessment, and an understanding of the type and size of facilities appropriate for biotech use, are invaluable to construct the Community piece by piece.

6.2 Design Opportunities and Challenges

The development of the straw plan coincided with the technical workshops. As technical information was gained and questions resolved, additional community components could be planned. From the onset, there were characteristics of the community almost pre-determined due to the principals of transit-oriented development and livable communities, as discussed earlier in the report. These features include the following:

- The livable community will be located within walking distance from the passenger rail station.
- Housing will be the predominant land use and will be denser near the rail station.
- There will be a school of some type. A school is a marketing draw and thus deserves a prominent position, probably anchoring the main street.
- Commercial activities will be located close to the train station and the main street.
- Parking will be structured either behind the commercial buildings or will be on-street.
- The community will be pedestrian oriented, but will offer strong transportation connections to all modes of travel.

- Bio-technology office and lab space will be a component.
- Parkland will be planned throughout the community with a central, large open space.

Beyond these features, other questions such as where the livable community would be located in proximity to the rail station, the amount of land needed, and the connection to the transportation system remained. The following discussion identifies several of the opportunities, synergies, and challenges of designing the livable community in such a way that it complemented the rail station and provided a unique opportunity for a live, work, play area that does not currently exist in Barrow County.

6.2.1 Location of the Livable Community

The question of where to locate the livable community was a critical one to commence the conceptual design. The community was sited in every direction from the station. An advantage existed to locating the community north of the station as the rail tracks would not need to be crossed for residents to arrive at the station. However, this site also has the disadvantage that SR 8/53, the main transportation access at the station, is located south of the tracks. Thus, commuters dropped off at a kiss and ride, would be forced to cross the tracks.

Agricultural and wooded land exists south of the station while the land to the north of the station is residentially developed with one to one-and-a-half acre lots in a cul-de-sac layout going up a rising slope to a ridge that drops sharply. This ridge stands as a barrier to further neighborhood development. The undeveloped land to the east of the station is about one-hundred and sixty acres, large enough for a planned development, but it is landlocked by the station, airport, and existing residential development thus providing barriers to long-term expansion. It is conceivable that a site to the west of the station could be utilized for residential development or additional bio-tech facilities, but this area lacks sufficient land to create a fully developed livable community as a stand alone site.

Based on the significant amount of agricultural land existing south of the station, the golf course, possible future connection into the east side of Fort Yargo State Park, on the other side of Corinth Church Road, and location within the Linear Research Park, it was decided that the area south of the

proposed passenger rail station presented the greatest opportunity for short and long term development and expansion of the livable community. Unlike the northern, western, and eastern sites, the southern site is not locked in by natural features or developments. The opportunity for continued expansion and / or connection with development just north of SR 316 is central to other economic development, land use, and transportation initiatives that are emerging for the SR 316 area. The ability to tie the livable community into this linear park both in terms of access and development synergies makes the livable community a more desirable place to locate.

6.2.2 Market Analysis and Economic Basis For Development

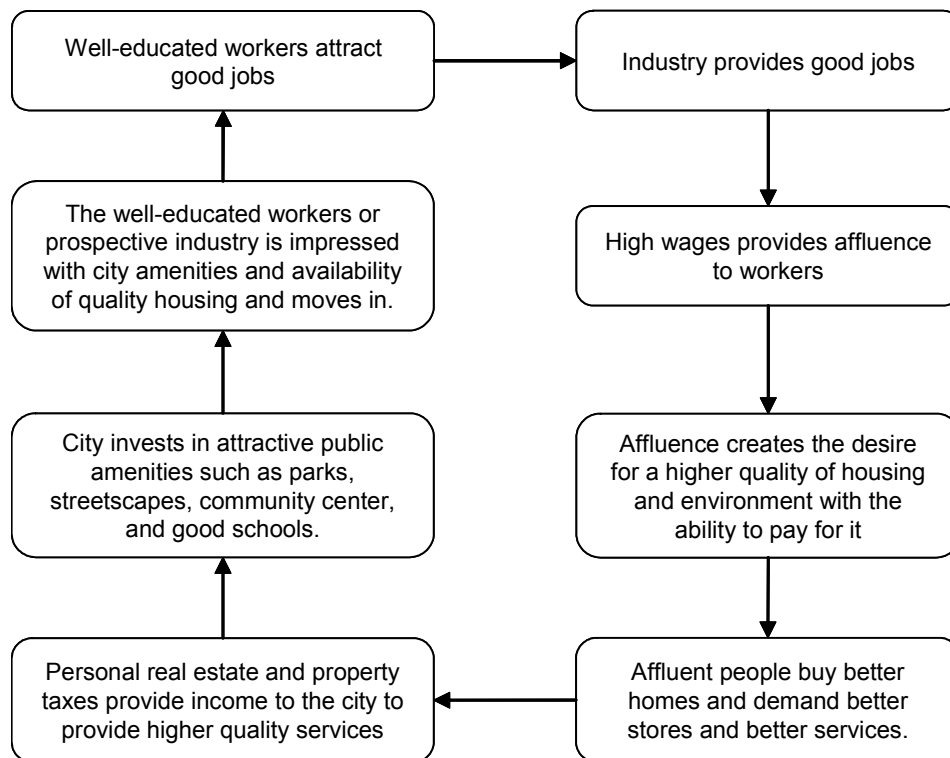
The City of Winder is not attractive to new industry. Wages remain modest, and there is little ability to afford a better quality of community. The City does not receive enough tax support to provide sewer service and the use of septic tanks creates low-density housing. Homeowners are generally dependant on automobiles. Industry and well-educated workers choose other cities that provide the type of amenities that are found in livable community environments.

We anticipate that the housing units in the livable community will be planned for greater density and market price than the residential market in the City of Winder and unincorporated Barrow County, thus differentiating the product from the existing supply in order to create a higher level of demand. A long-term view of “what could be” instead of “what currently is” needs to be adopted. The market analysis created by RCLCo does not reflect this as the research focused on trends and conservative changes to the type of development that already exists in Barrow County.

The focus on attracting biotech research industry that provides good jobs with higher wages will result in greater affluence. Residents will want a higher quality of housing and community environment and will have the ability to pay for it. As the better homes are purchased, demand will be created for a higher level of services and stores, generating additional property taxes and business license fees. Such taxes and fees will allow the local government to provide additional services and higher quality services, such as public parks, streetscapes, and a community center. The synergy created is circular as well-educated workers and industry are attracted to the city amenities and availability of high quality housing. Additional research industry and housing move in to the community allowing for additional phases of development to be opened and a successful marketing story emerges.

The Figure 22, shown below, illustrates a common cycle of interrelated development conditions.

Figure 22: The Economic Basis of Development



6.2.3 Walking Distance and Community Size

The size of the community must be developed with the maximum distance that a person will walk in mind. Planners assume that a five-minute stroll, which is close to a quarter mile or 1,320 feet, is a reasonable distance to walk. This number is often rounded up to 1,500 feet. The area of a circle with a radius of 1,500 feet is approximately 162 acres and represents a “planning pod.” The southern site has over 600 acres of agriculturally zoned land that could be designed to accommodate a multi-phased project that includes various housing communities, retail, office space, park space, bio-tech research space, public buildings such as a library or post office, a school, and private day care.

6.2.4 Open Space and Parkland

As stated in the environmental characteristics of the technical workshops section as well as shown in the aerial photograph in Appendix M, the amount of open space available for development is vast. This is an advantage as the number of residences and businesses that will need to be moved is few. As compared with developing in an urban area where already developed land will need to be cleared to create open space, the site south of the rail station has plenty of space that can be used as community gathering spots or an area for gray water. Groves of trees already growing can be left untouched, in their a natural arrangement. Views of the golf courses and Fort Yargo State Park provide incredible views for upscale housing and office / lab facilities. An opportunity exists to have an open space / park preservation group locate their offices in the community.

6.2.5 Brownfield Site

The brownfield site, located directly across from the rail station, provides an opportunity to clean up the land, raising the value of the infected area and adjacent parcels. Government assistance will most likely be necessary to clean up this site

6.2.6 Parcel Ownership

The area identified has less than ten owners as multiple parcels are owned by the same family. Again, the opportunity here is the ease to purchase land as compared with numerous owners.

6.2.7 Midland Avenue Upgrade

The upgrade to Midland Avenue will raise the value of the area and will complement the pedestrian and bicycle nature of the community. It will also provide a safer, more accessible connection to downtown Winder. A design challenge associated with Midland Avenue is moving people from this area, over the rail station, and into the livable community. Since the community will be located on the other side of the rail station and tracks from Midland Avenue, a bridge will be necessary. This structure, however, can be a positive asset for the community by providing drivers, walkers, runners, and bikers with an inviting view into the community. This is an excellent marketing opportunity for the retail stores located in the front part of the community.

6.2.8 Use of Parking Lot

An automobile parking lot is planned adjacent to the station. Since the commuter rail service is scheduled to operate during the week, the parking lot can be used for another purpose during the weekend. One idea is for a religious building to be sited at the north end of the community, close to the station. The religious building could be used for church services as well as other community gathering activities, and the parking lot would be shared.

6.2.9 Historic Homestead

The Richard B. Russell historic homestead is not presently open to the public. Its location across from the rail station and significance to Barrow County history makes it a community landmark that should be restored and opened for public visitation and learning. Furthermore, with this historic site on the property, a historic group might locate their office in the livable community.

6.2.10 Infrastructure

Throughout the technical meetings, the issue of needed infrastructure was discussed more than any other consideration or area characteristic. The reason is that development cannot happen without the sewer and water infrastructure, and the nature of the system put into place will affect the type of development. The technical workshop section discusses various solutions to this problem, ranging from a new wastewater treatment plant, mechanized systems for each residential unit, and having a corridor entity oversee all infrastructure needs.

6.2.11 Commercial Activity

Barrow County has only one main commercial center, downtown Winder. A challenge exists not to take business away from Winder. It is believed that with hundreds of additional residential units, the commuter rail, and the Bypass, retail will surely follow in the area.

6.2.12 Linear Research Park

The opportunity to assist in the creation of the Linear Research Park between the rail line and SR 316 exists. This area will develop as growth is affecting the area between Gwinnett and Athens Counties with increased congestion and development activities. The livable community is a part of a larger goal to develop this corridor in line with smart growth principals as well as statewide economic development goals.

6.3 Description of the Straw and Master Plans

The above issues were in the forefront as architects at the Sizemore Group planned the concept level design straw plan and then further refined it into the master plan. The straw plan was discussed at the technical meetings and proved to be a useful tool to discuss the layout and components of the community. The plan did not radically change between straw and master forms; rather, the architectural details were checked by illustrating the site in a 3-D computer program to determine if building heights blocked views, if the bridge over the railroad tracks provided an inviting entrance into the community, and Main Street was sufficiently anchored on either end. Additionally, green space for irrigation was added to the plan once the mechanized sewage treatment system was better understood, the roads were laid out in a grid type pattern with houses facing similar type structures, and traffic calming measures, such as on-street parking and roundabouts, were added.

The components of the master plan, which evolved out of the straw plan, are discussed below.

6.3.1 Entrance into the Livable Community

A bridge leads from the upgraded Midland Avenue into the Main Street of the community, providing a view over the stores facing SR 8/53 as well as the pedestrian-oriented Main Street. The road network inside the community is based on a traditional grid with ample pedestrian and bike access.

6.3.2 Size of the Livable Community

The straw plan is 196 acres including the rail passenger station, which is slightly larger than the generally accepted walking distance. The Team has justified this increase in size because there will be elements not accessed by all passenger rail riders, such as biotech lab facilities and the school. The community could be expanded, especially to the west to connect with Fort Yargo State Park, in a future phase.

6.3.3 Rail Station

The rail station is located on the north side of the existing railroad tracks. This location adjoins land for substantial parking without displacing existing residents. It leaves the south side open for the development area. Sidewalks and pedestrian stairways are therefore critical to allow for ease of access across the bridge and into the community.

6.3.4 Main Street Atmosphere

The proposed Main Street will be a central meeting space with eateries and coffee houses, retail including bookstores and specialty clothing shops, and loft style living above stores. On street parking is planned in order to narrow the road, and pedestrian crosswalks are raised to the sidewalk level and paved in brick, emphasizing the pedestrian nature of this street.

6.3.5 Retail and Restaurant Area

The other retail and restaurant area is located to the right as the community via the bridge from Midland Avenue, driving from SR 8/53, or by walking from the rail station. High-end retail and restaurants will attract livable community and Barrow County residents alike. Typical smaller uses will continue winding towards Main Street, and on Main Street, several stores and restaurants will have housing located above.

6.3.6 Civic Circle

A civic circle is a circular green space which provides a focus for the civic buildings, including the school, library, and senior care facilities. The circle, as shown in Figure 23 is located at the end of Main Street, and purposefully anchors Main Street.

6.3.7 Transportation Network

Main Street, which connects to Midland Avenue via the bridge over the railroad tracks, will end across from the elementary school at a roundabout with access to two new local roads. One road connects to SR 11, adjacent to Fort Yargo State Park. SR 11 leads south to SR 316 and north to Midland Avenue. The other new road intersects Golf Course Road, which leads to Corinth Church Road and onto SR 316.

Roundabouts, or traffic circles, are used throughout the site. These elements serve to slow down traffic speed and increase traffic volume compared with traffic lights. These also create a more pedestrian friendly environment, while at the same time cutting down on the likelihood of traffic accidents. Studies have shown that the use of such traffic calming measures reduce the amount of traffic accidents over the traditional traffic signals and signs.

Figure 23: Civic Circle with Library and Senior Care Facilities



6.3.8 Housing Types

This community will have a mix of housing types typically in the range of 1,800 square feet to 3,000 square feet. In successful residential neighborhoods with a mix of housing types, similar size and type of dwellings should face each other. Single family houses are planned, along with similar styles that have granny flats. In addition, there are townhouses, townhouses with detached garages, units above flex space (retail or restaurant), single story condos, apartments, and luxury apartments. See Figures 24, 25, and 26 for illustrations of single family housing types envisioned for the livable community.

Figure 24: Example 1 of Single Family House



Figure 25: Example 2 of Single Family House



Figure 26: Example 3 of Single Family House



6.3.9 BioTech Facilities

The two biotech facilities on the site are incubator buildings for biotechnology which will be used as a catalyst for bringing new biotechnology into the region. The location of the biotech facilities takes advantage of the view towards the golf course, the proximity to apartments and affordable housing for young employees, and close proximity to the school and restaurants on Main Street. Single family homes are no further than a ten minute walk.

6.3.10 Elementary School

An elementary school will attract an influx of young families brought to the area by the new biotechnology and supporting industry coming to the area. It will serve the livable community as well as the larger Winder area with fields that can be used as open space and classrooms for continuing education classes.

6.3.11 Senior Housing and Elderly Care Facilities

In keeping with the concept of a livable community for all ages, there are two forms of elderly care adjacent to each other on the site. The first facility is a congregate care facility. This facility helps those in need of assistance, but who can maintain a private living situation. The second facility is an assisted living facility. This facility is focused on caring for the elderly and infirmed as their needs grow toward 24 hour care.

6.3.12 Water and Sewer Infrastructure

The proposed solution to the issue of providing infrastructure for dense development is, at least for the short term, to use a mechanized system for each residential unit or each neighborhood block.

This system is ideal for numerous reasons: the county currently allows development on acre plots (less dense than is planned for the livable community) due to septic system requirements, the county's sewer system is reaching capacity, and a new wastewater treatment plant is not only expensive but requires a certain amount of wastewater to operate. Once the development has been proven, another solution, such as adding capacity to the current wastewater treatment facility or constructing a new facility, may be a prudent approach.

The treated sewage effluent would be distributed into green spaces to both dispose of and provide year-round irrigation for public green spaces.

6.3.13 Library

A library is a key civic building which is situated for ease of access from the elementary school, the elderly care facilities, and a large neighborhood. This civic building would serve as a community gathering place and provide an active public facility on the site.

6.3.14 Distinctive Style

According to Sizemore Group architects, the decision makers in most communities are in their late forties, fifties, and sixties. Their preference is often for traditional small town architectural styles. However, a new town center takes longer and so the wishes of the younger market should be included. Their preference is often for 19th century handcrafted industrial style with traditional design principles, such as natural materials, natural forms, and heavy forms like piers and arches. The traditional is contrasted with light weighted twenty first century metallic and glass materials. At ground level, low walls shield parking lots from view. There should be lots of windows, especially on second floors of retail and at storefronts on the first level. It is important to break up building fronts and forms as well as roofs, as was discovered in designing the apartments. A consistent palette of materials and colors were used, with wider variations for retail (more colorful) and civic (more permanent). Civic buildings must tie together and be stately, yet simple enough to not be too expensive.

6.3.15 Existing and New Green Space

Retained existing green spaces are left as natural as possible and extend from Fort Yargo State Park to Main Street to bring a little "country into the city." These existing spaces provide a "bush wacking

route” connecting two activity centers, downtown Winder and the livable community through Fort Yargo. New green spaces are laid out in a regular pattern to provide shade and visual continuity. Additionally, Fort Yargo State Park is a major park for camping and lakefront activities. It is a great resource and amenity as the livable community can extend to the west.

In addition, the historic Russell homestead is left intact as a historic memorial and community green space. It homestead could be used for offices for a park service group.

6.3.16 Creation of a Linear Research Park

The opportunity to assist in the creation of the Linear Research Park between the rail line and SR 316 exists. This area will develop as growth is affecting the area between Gwinnett and Athens Counties with increased congestion and development activities. The livable community is a part of a larger goal to develop this corridor in line with smart growth principals as well as statewide economic development goals.

6.4 Master Plan Components

The residential, retail, office, biotech, and civic components of the livable community are detailed in terms of the number of units, the average square footage per unit, the total square footage, and the percent of development. As shown in the following section, the residential units comprise the largest group of buildings with 75% of the total square footage. Retail, biotech, office, and civic facilities occupy 7.4%, 5.8%, 3.3%, and 8.1% of the total square footage, respectively.

6.4.1 Components of the Livable Community

Residential Development	# of Units	Average SF/Unit	Total Estimated SF	% of Development
Type A Single Family Houses	200	2300	460,000	
Type A Single Family Houses w/ Granny Flat	22	3300	72,600	
Type B Single Family Houses	118	3500	413,000	
Type B Single Family Houses w/ Granny Flat	9	4500	40,500	
Townhouses	151	2000	302,000	

Townhouses w/ detached Garages	16	2500	40,000	
Units above Flex Space	108	2500	270,000	
Single Story Condos	132	1000	132,000	
Apartments	204	1020	208,080	
Luxury Apartments	12	1000	12,000	
Total Residential	972		1,950,180	75.5%

Retail Development	# of Units	Average SF/Unit	Total Estimated SF	
Dedicated Retail		Varies	109,000	
Flex Space under Residential	108	750	81,000	
Total Retail			190,000	7.4%

Bio Tech Development	# of Units	Average SF/Unit	Total Estimated SF	
Office Building	1	48,000	48,000	
Bio Tech Research Lab Space	2	51,200	102,400	
Total Bio Tech			150,400	5.8%

Office	# of Units	Average SF/Unit	Total Estimated SF	
Bank	1	11,500	11,500	
Office Space		Varies	73,000	
Total Office			84,500	3.3%

Civic Building Development	# of Units	Average SF/Unit	Total Estimated SF	
----------------------------	------------	-----------------	--------------------	--

Library	1	31,200	31,200	
Elementary School	1	31,000	31,000	
Senior Housing	2	39,800	79,600	
Religious Building Near Train Station	1	60,000	60,000	
Train Station	1	6,500	6,500	
Total Civic	6		208,300	8.1%

Total Development **2,583,380**

6.4.2 Images of the Livable Community Components

Figures 27 -45, found on the next several pages, highlight in red the various components of the livable community. Appendix N contains the master plan presentation, and Appendix O has the meeting minutes from the Smart Growth Task Force meeting, held in Athens, where the master plan presentation was presented before close to 100 planning professionals, economic developers, biotech scientists, and members of the SR 316 corridor local governments.

Figure 27: East Winder Livable Community Aerial Plan

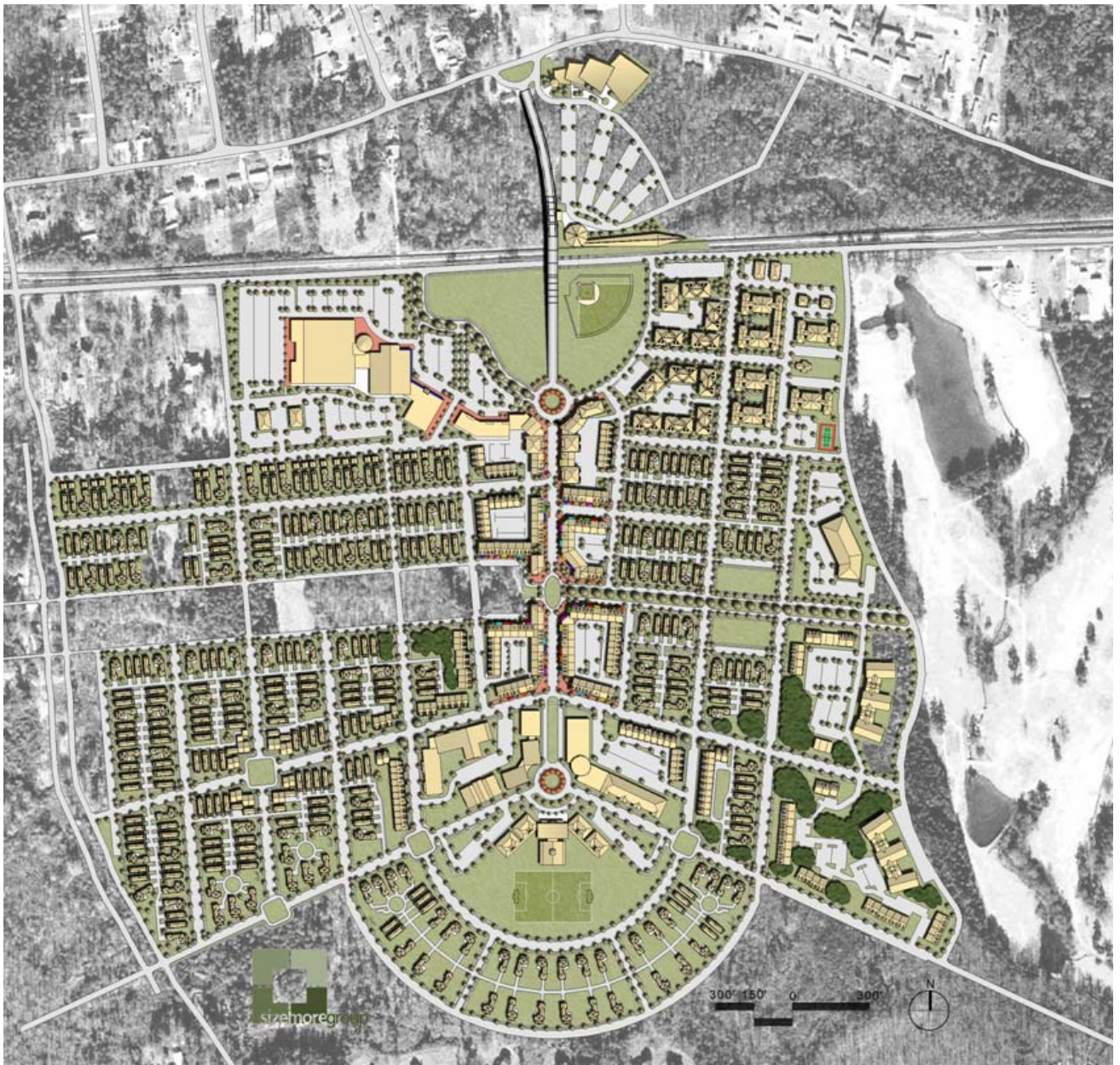


Figure 28: Bridge From Midland Avenue, Across the Rail Line, and into the Community

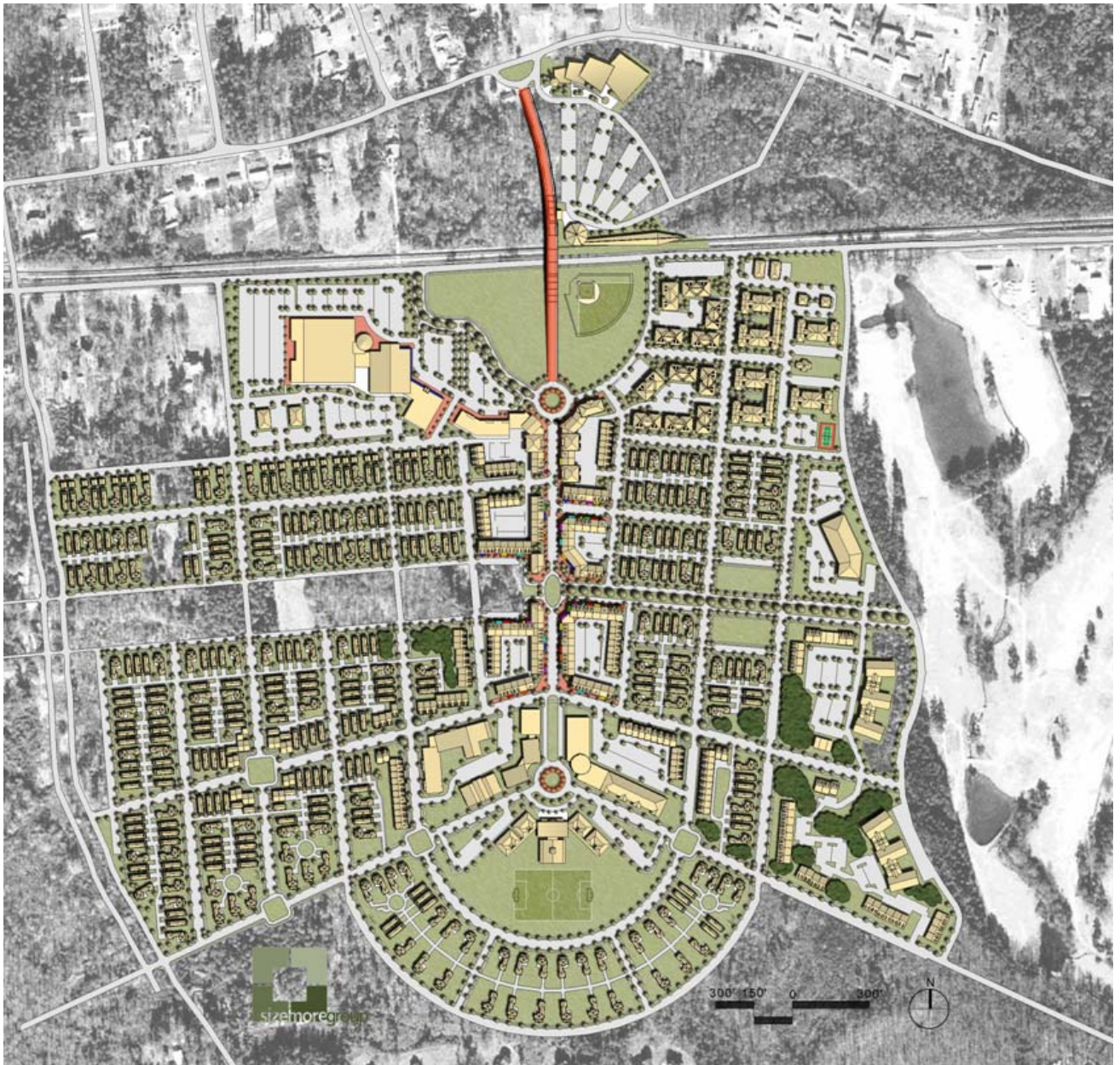


Figure 29: Proposed East Winder Passenger Rail Station

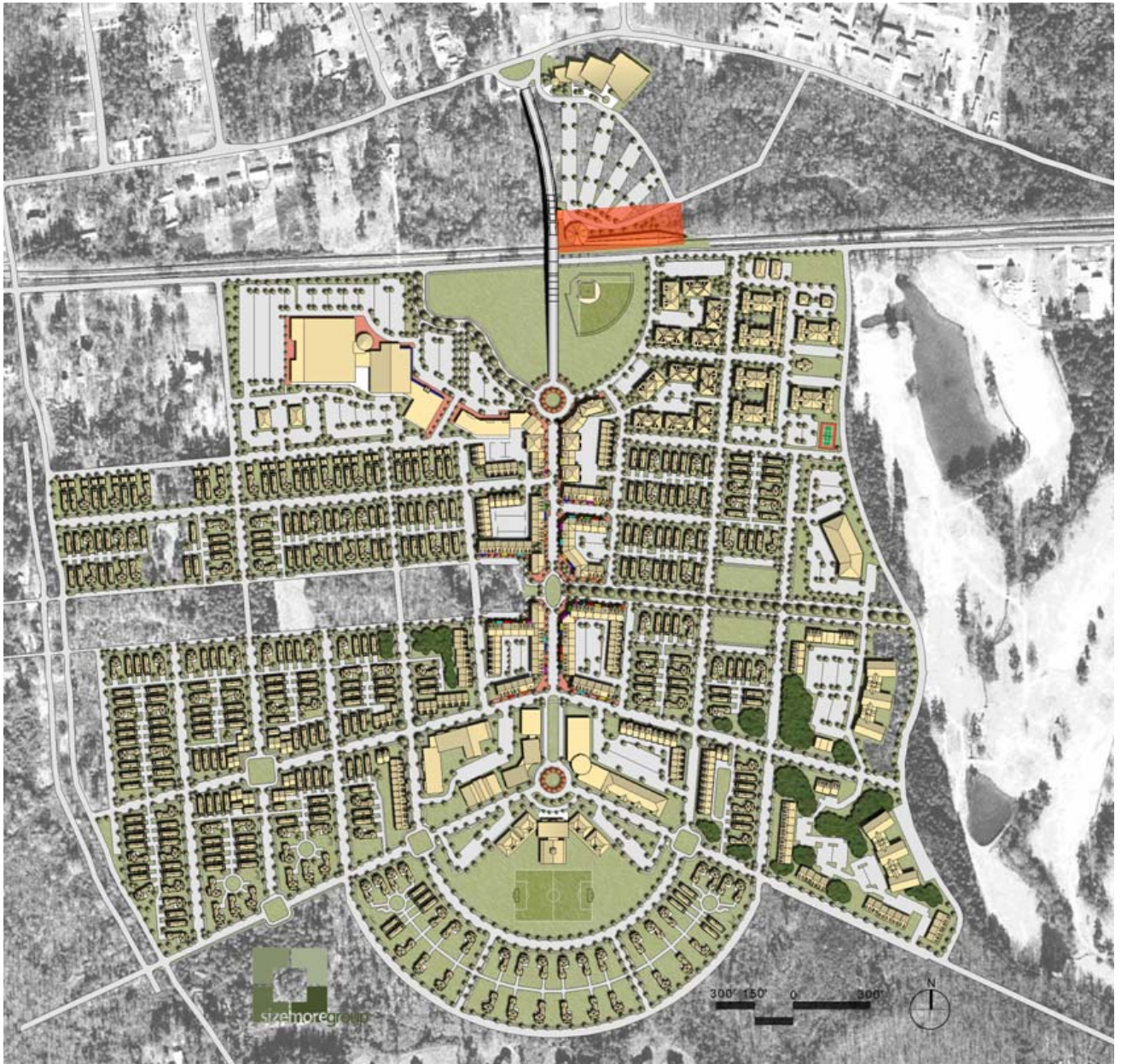


Figure 30: Religious Building

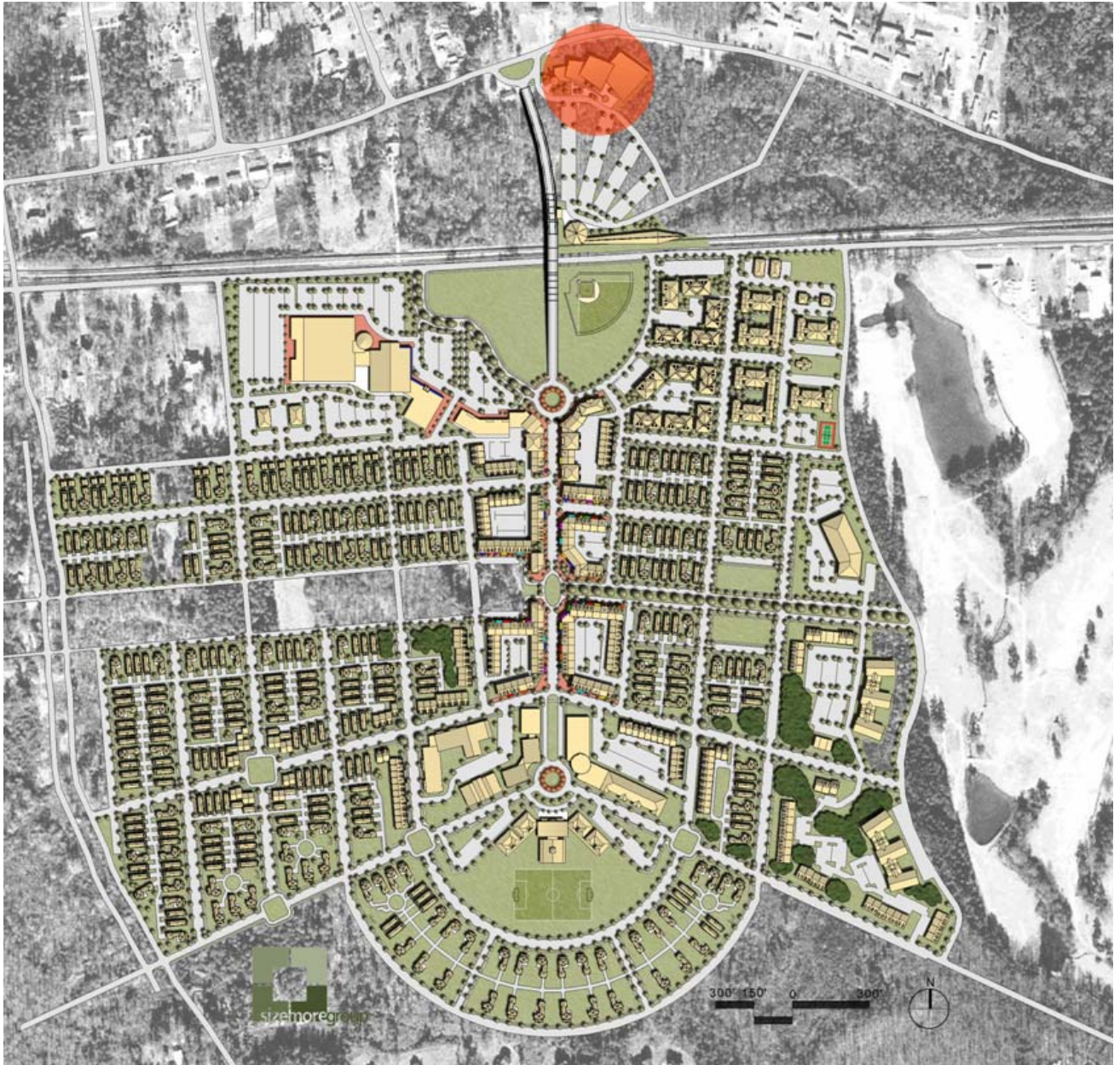


Figure 31: Shared Parking for Station and Religious Building

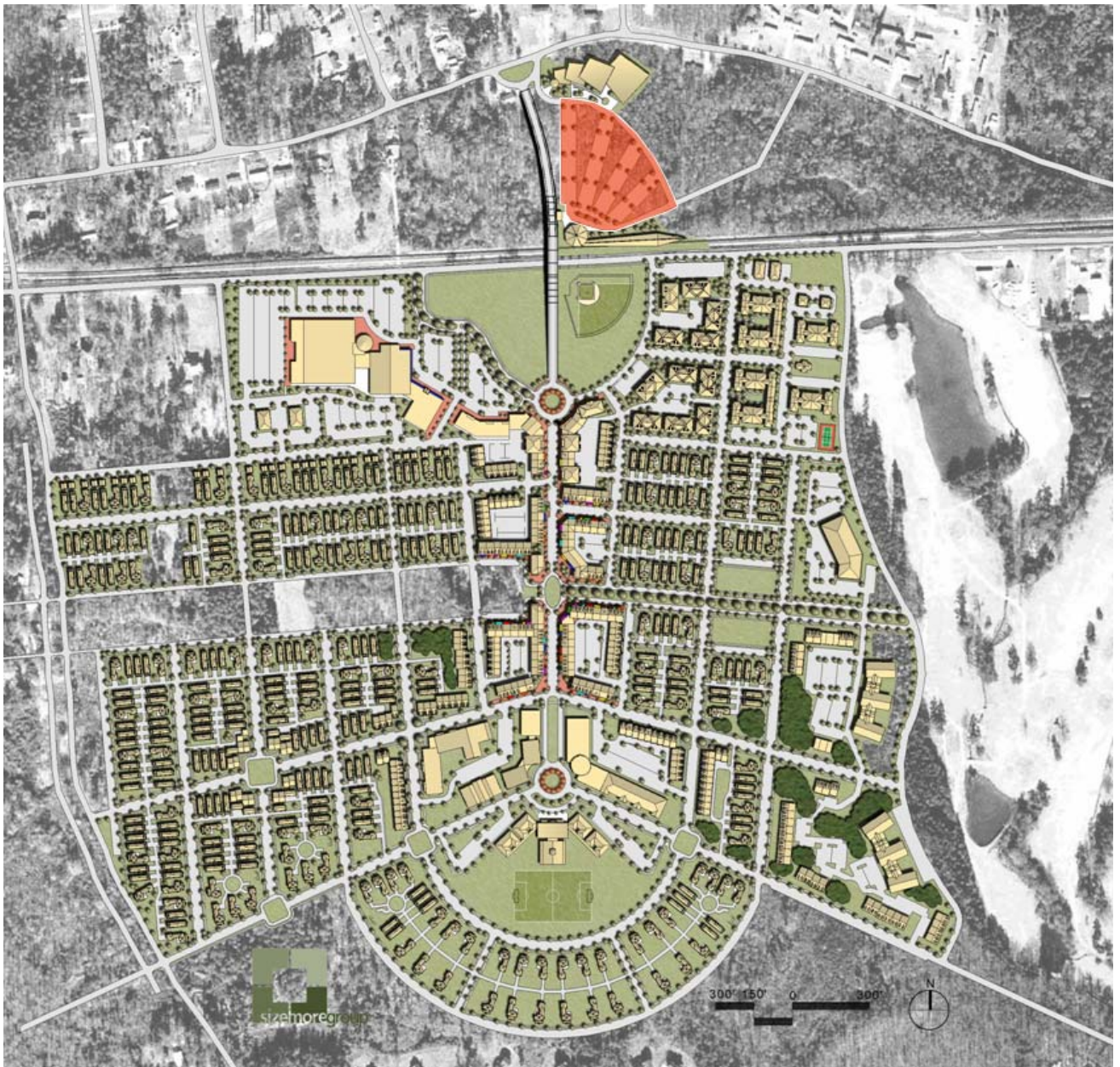


Figure 32: Fields and Ball Park on Either Side of the Bridge

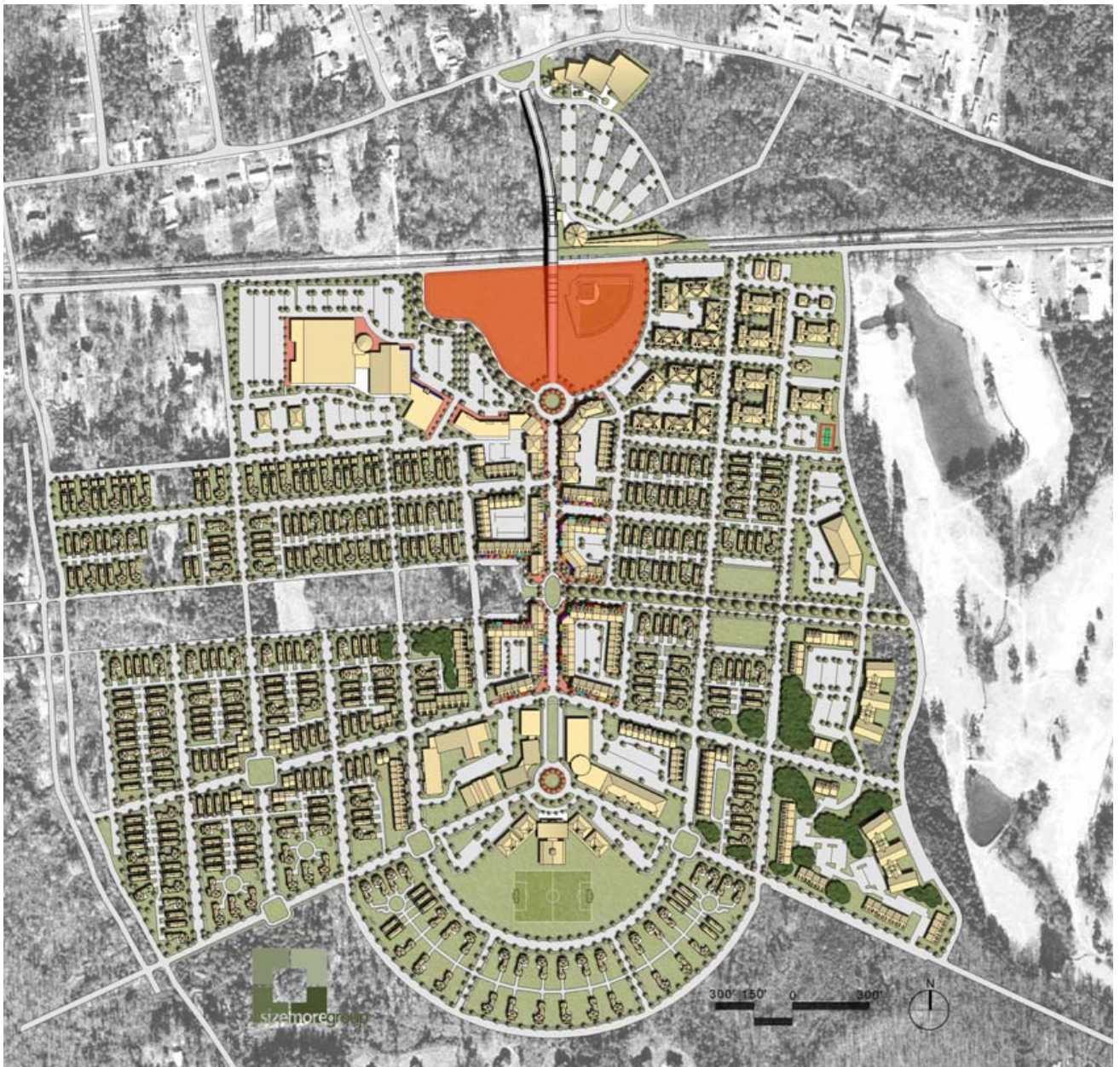


Figure 33: Auto Service Center

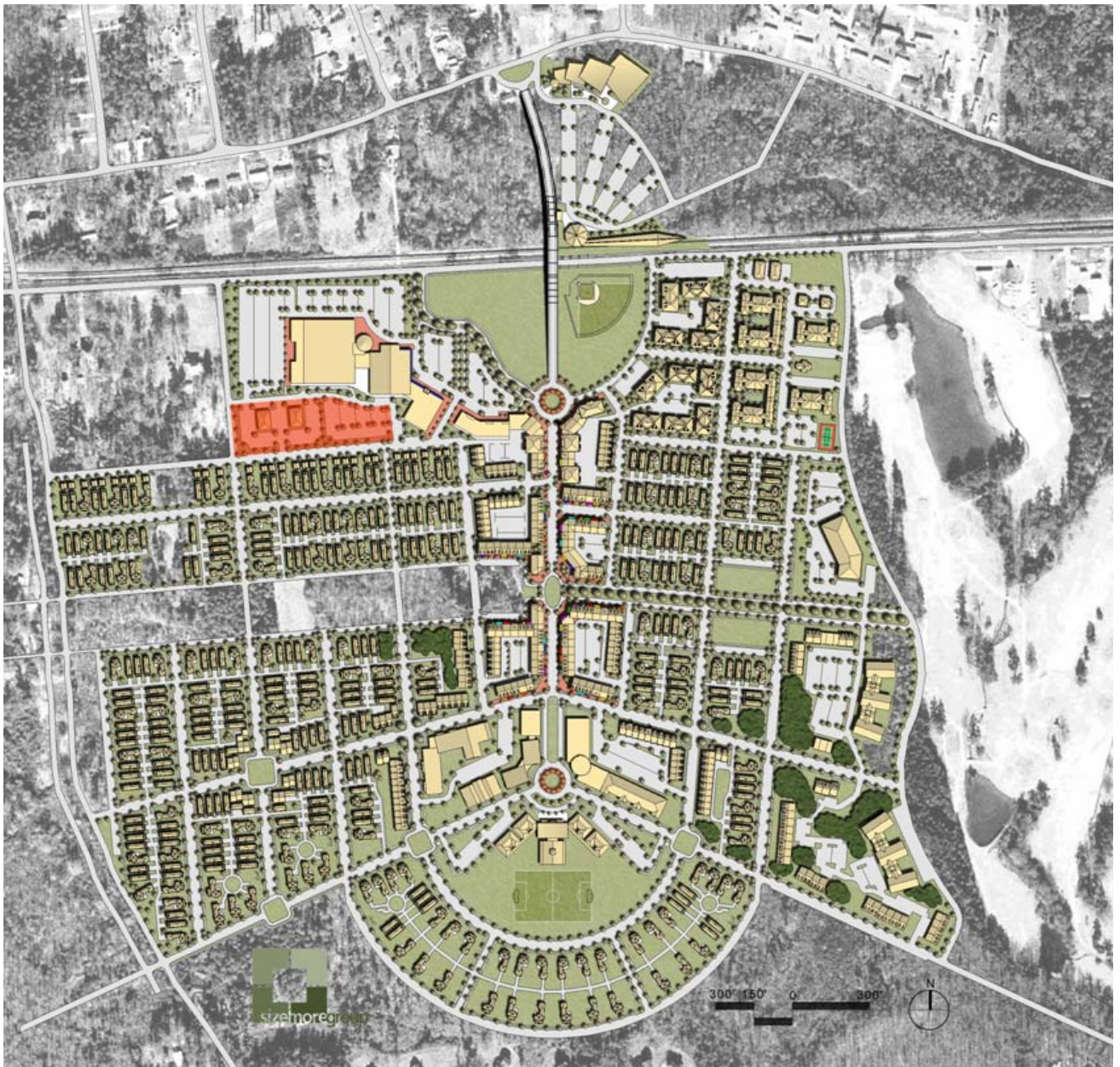


Figure 34: Historic Russell Homestead

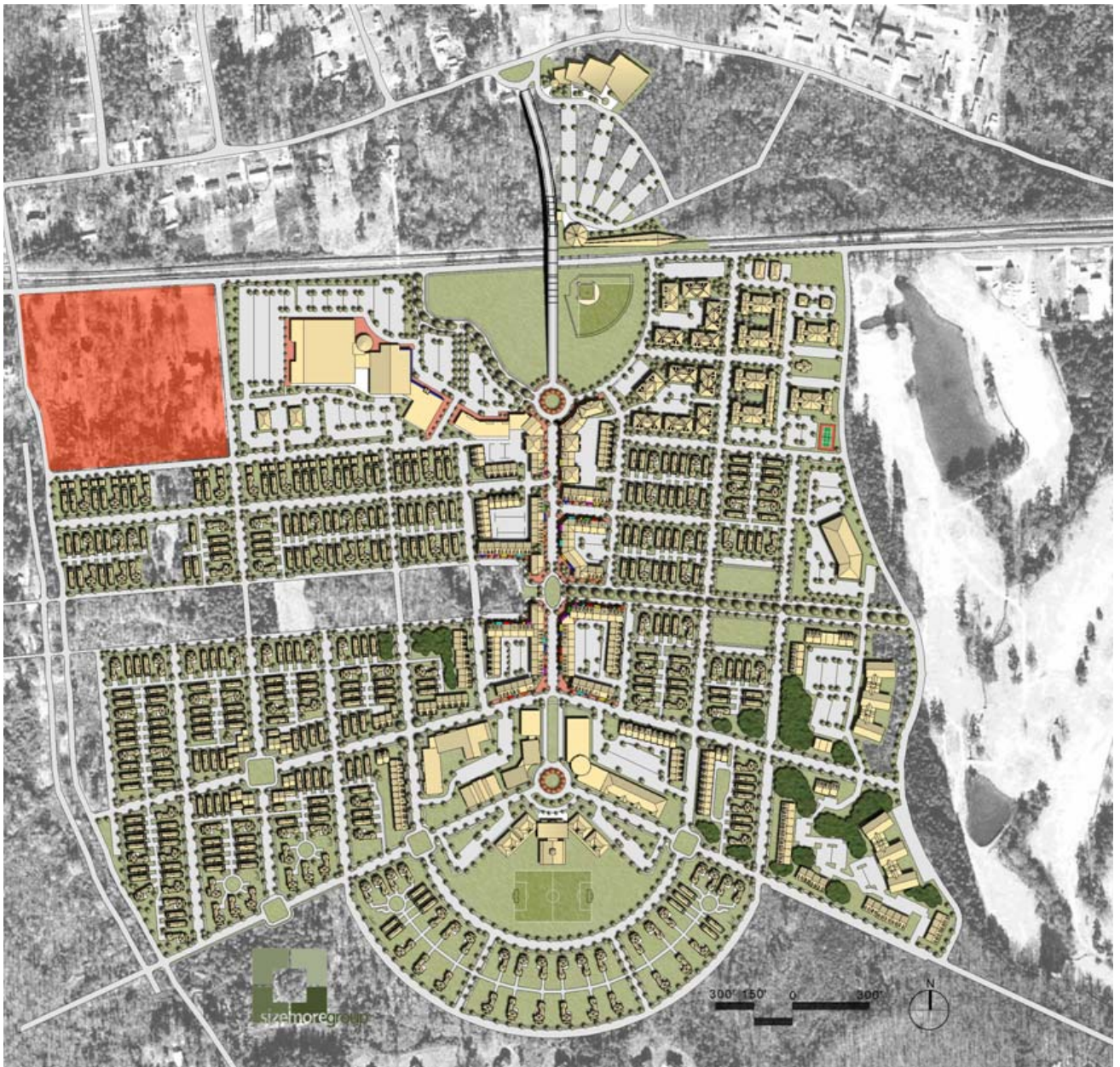


Figure 35: Retail and Restaurants

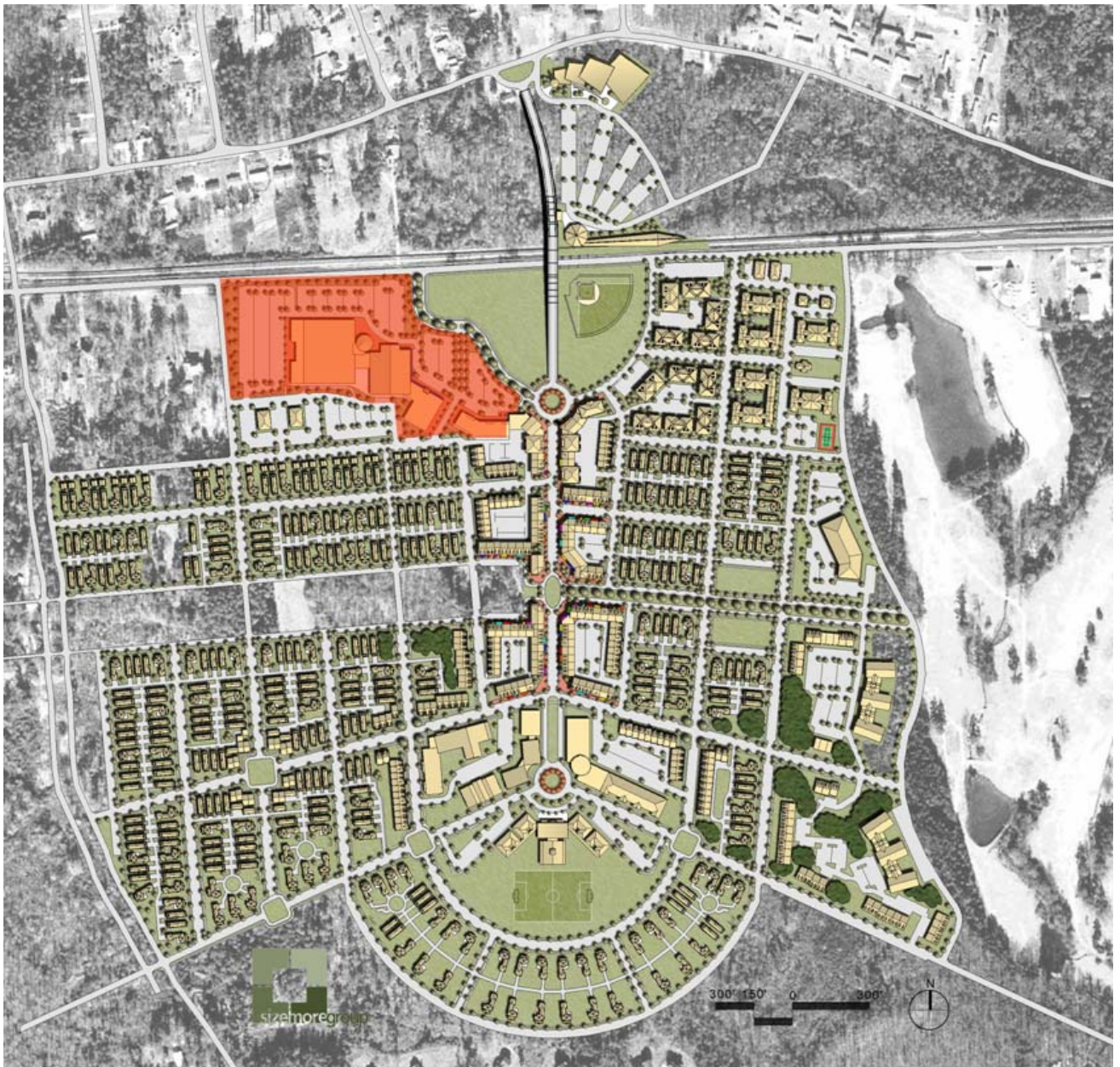


Figure 36: Main Street with Retail Shops, Loft Living, and Restaurants

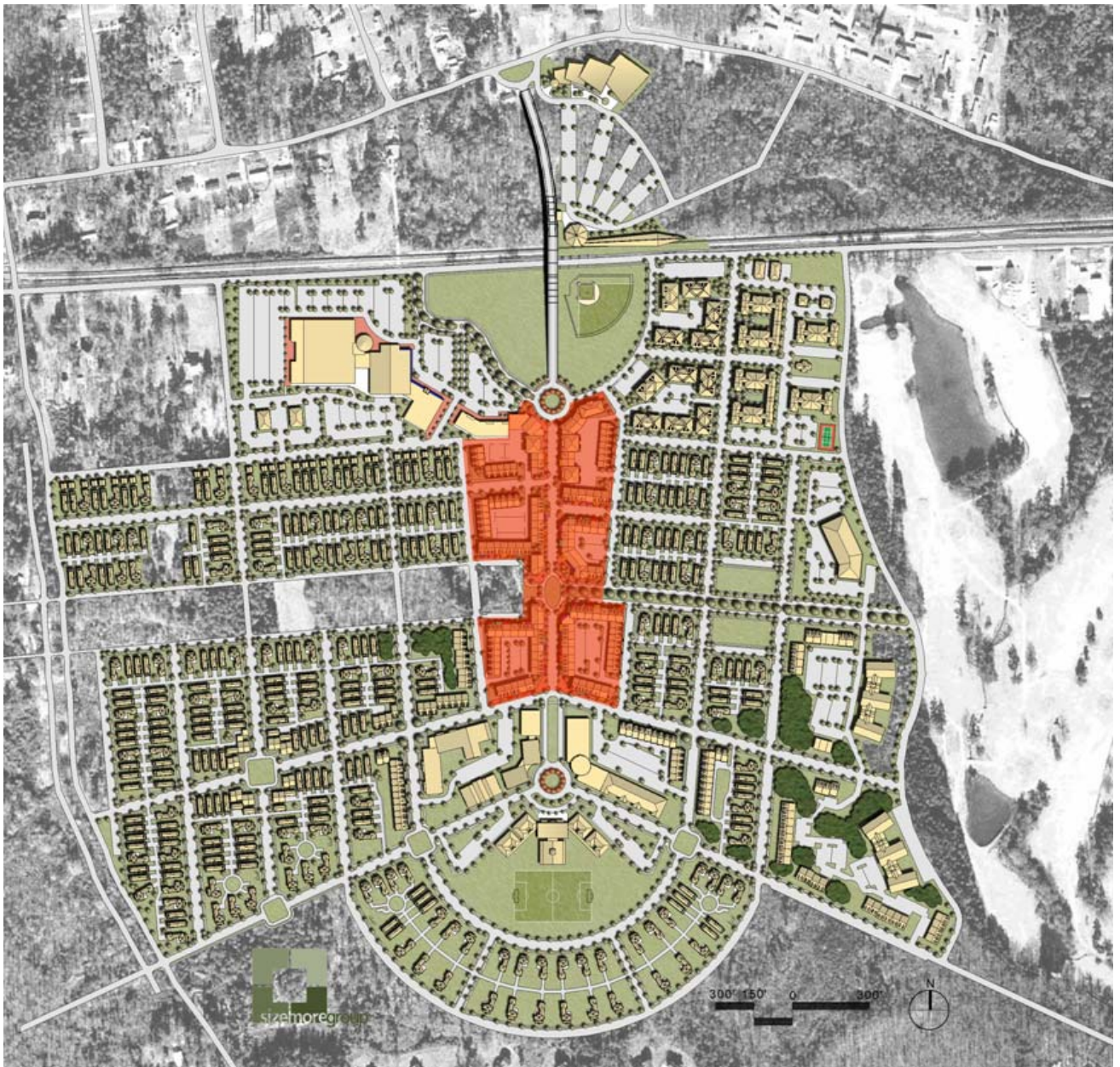


Figure 37: Apartments

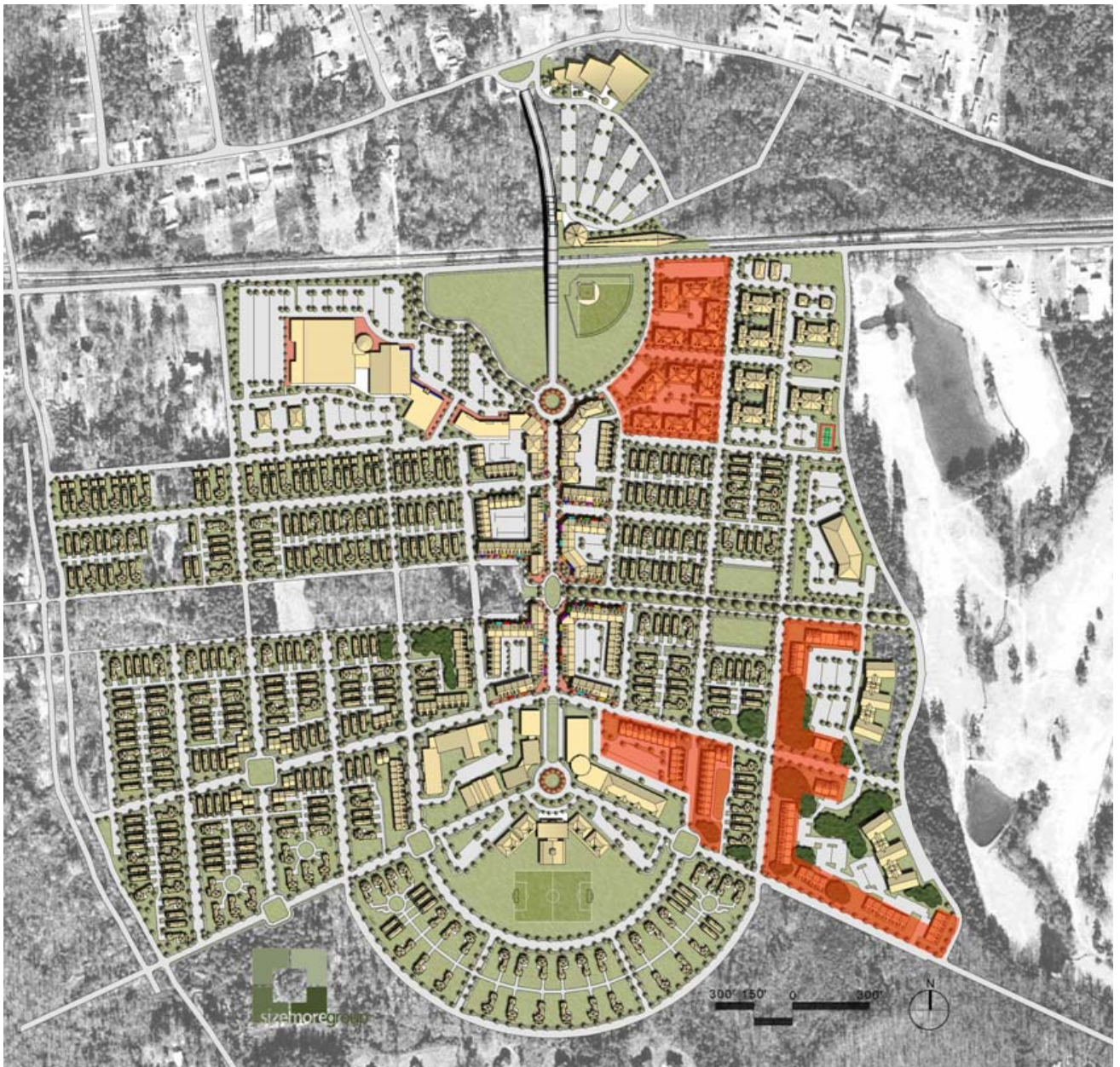


Figure 38: Condos

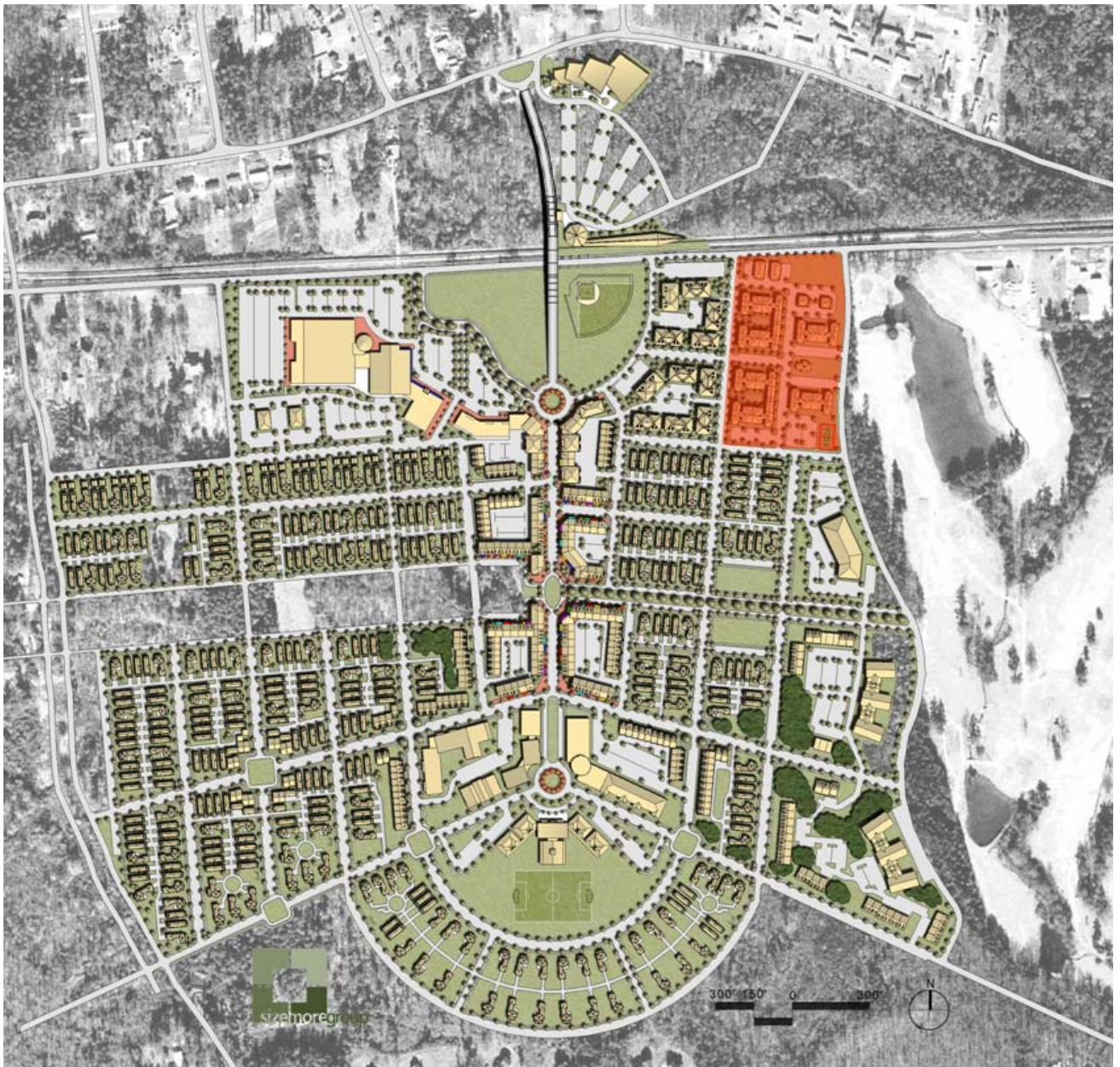


Figure 39: Single Family Housing

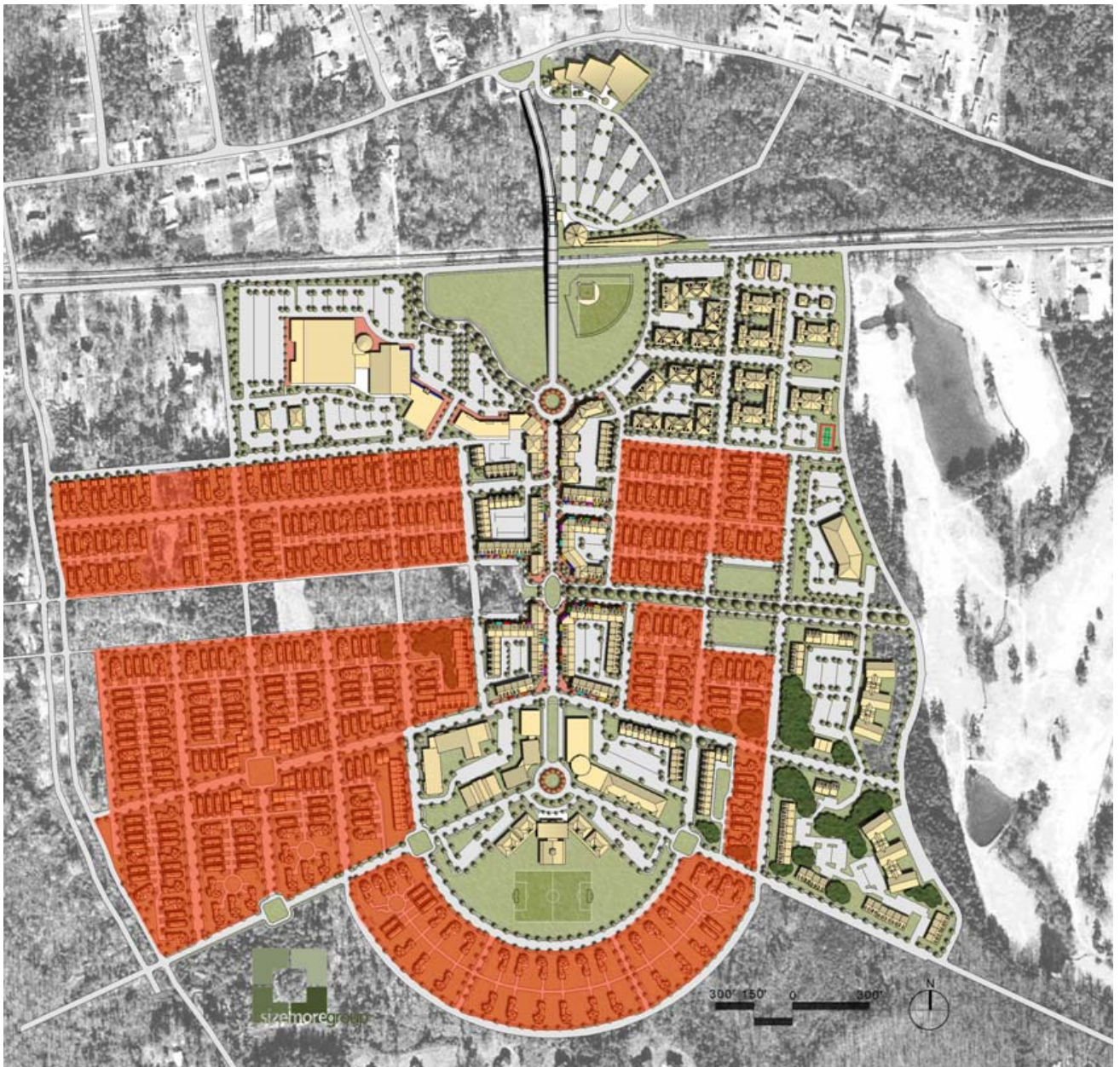


Figure 40: Elementary School

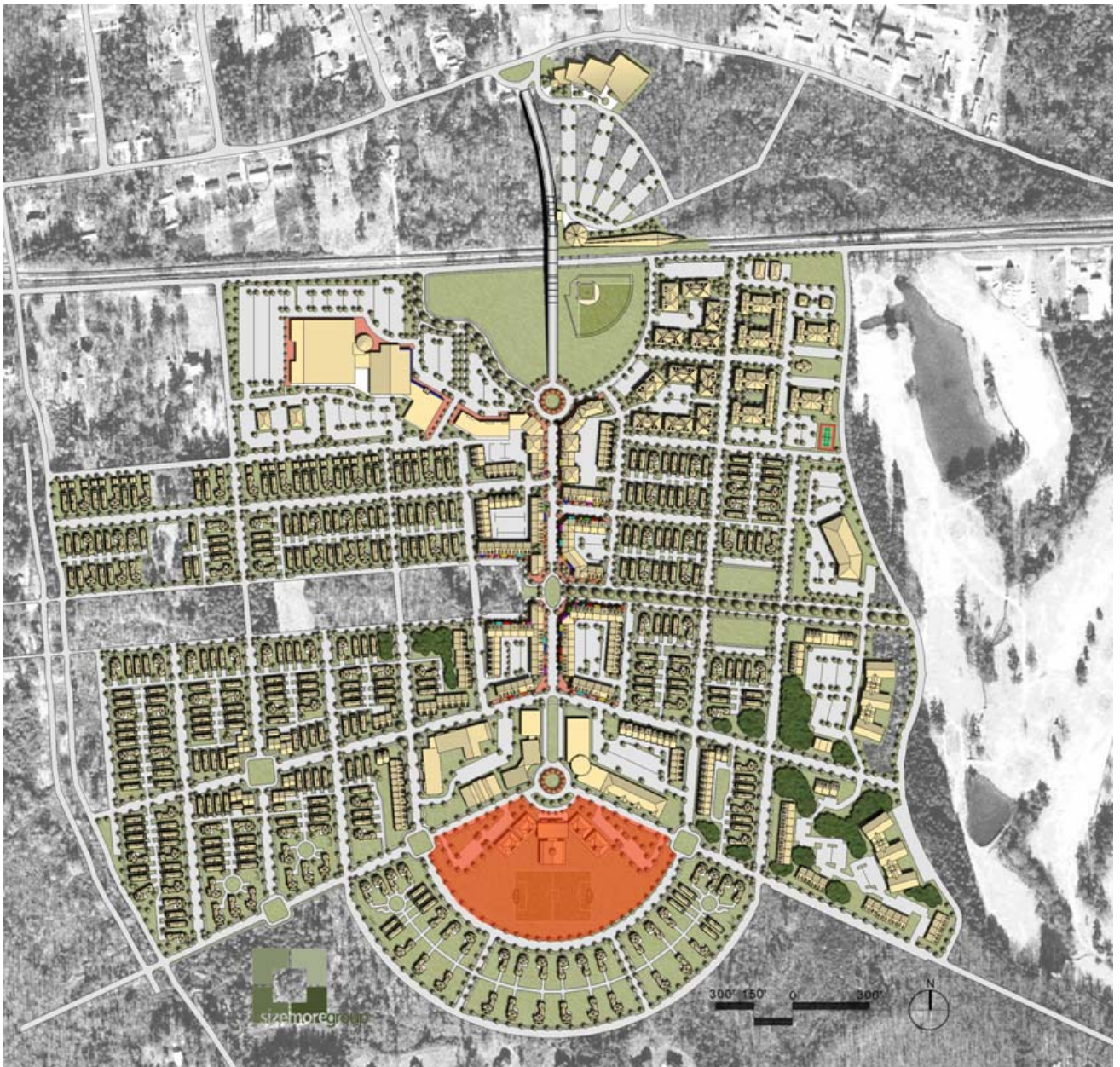


Figure 41: Civic Structures

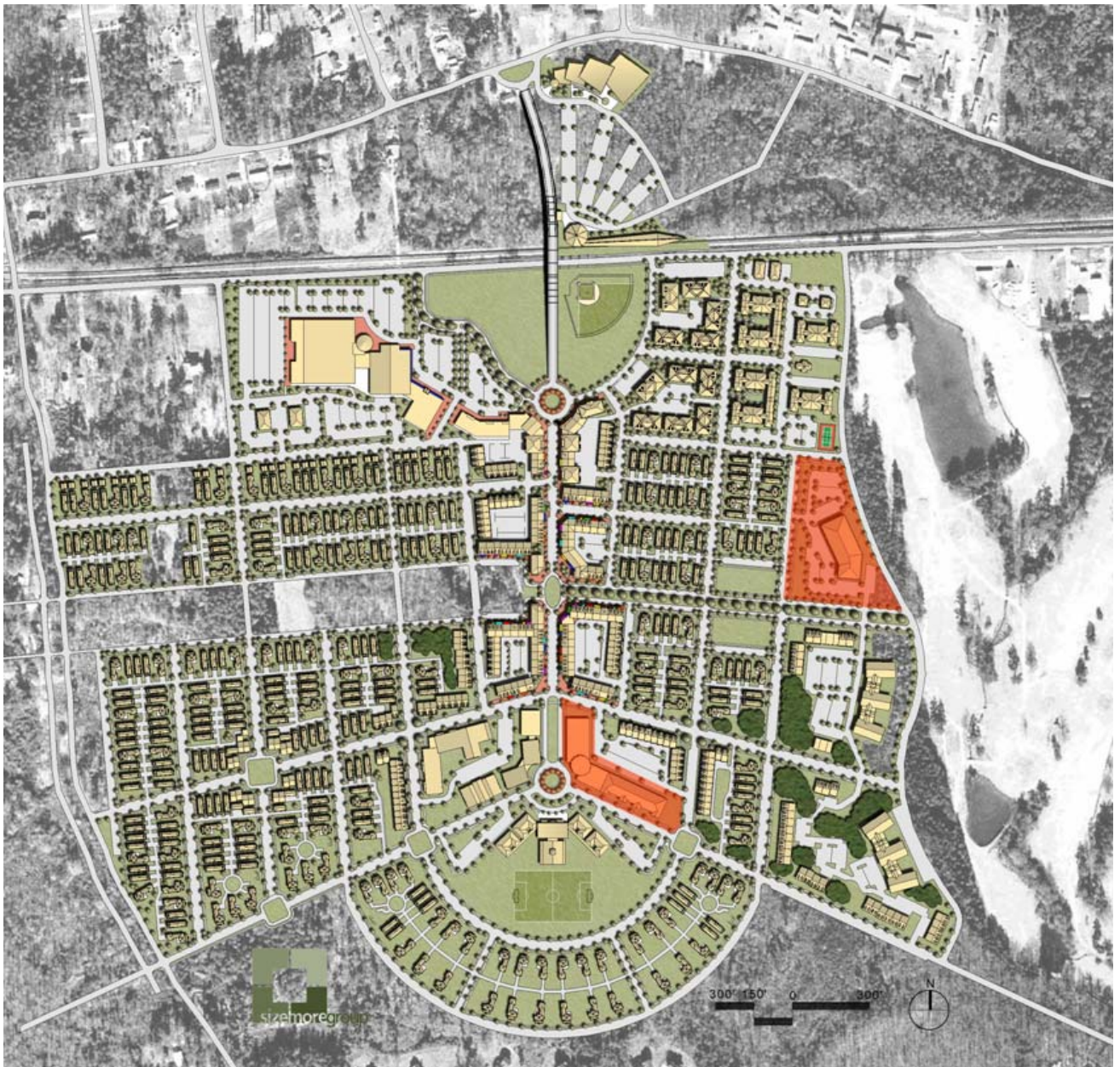


Figure 42: Senior Care Facility – Assisted Living

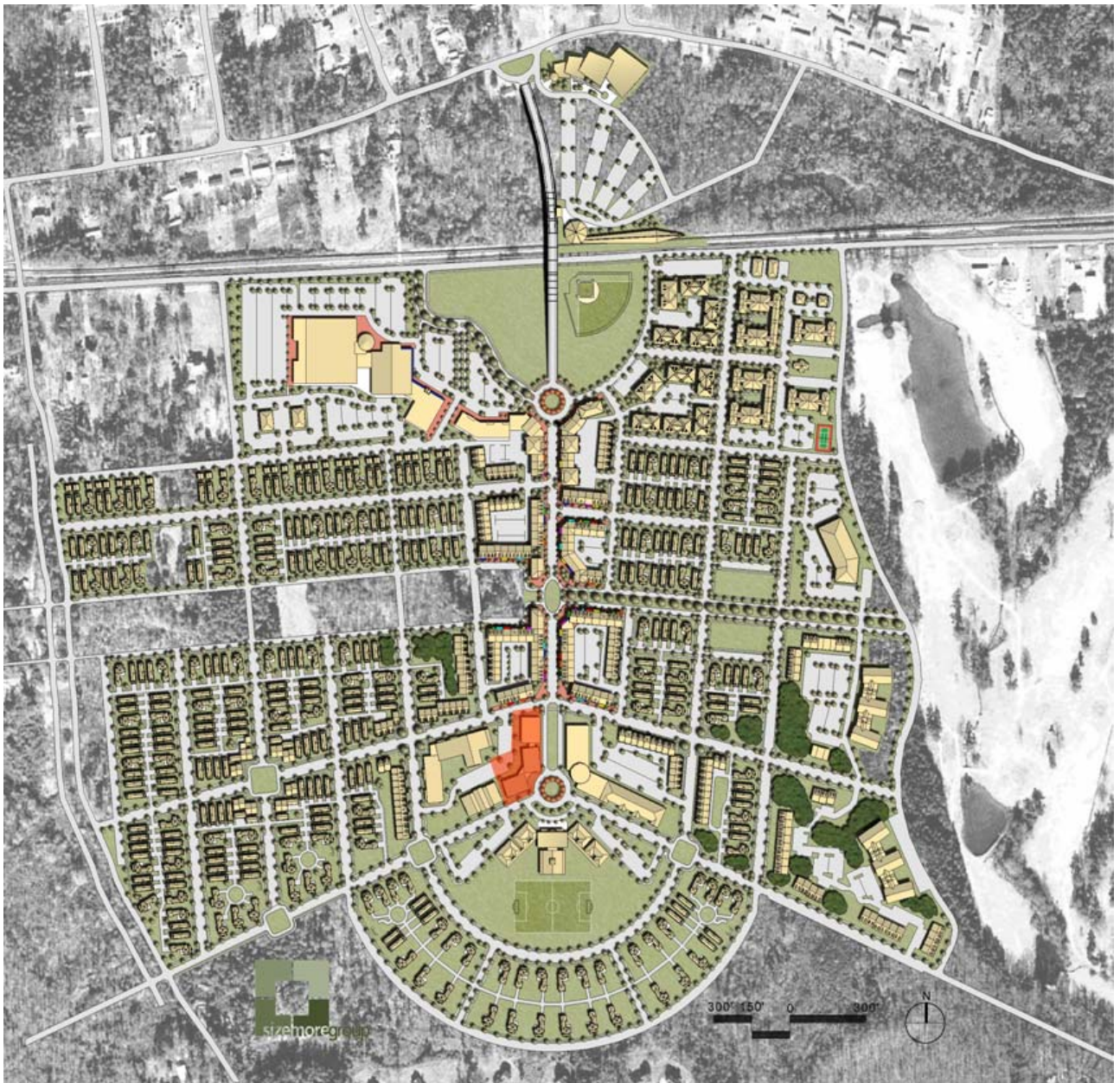


Figure 43: Senior Care Facility – Congregate Care

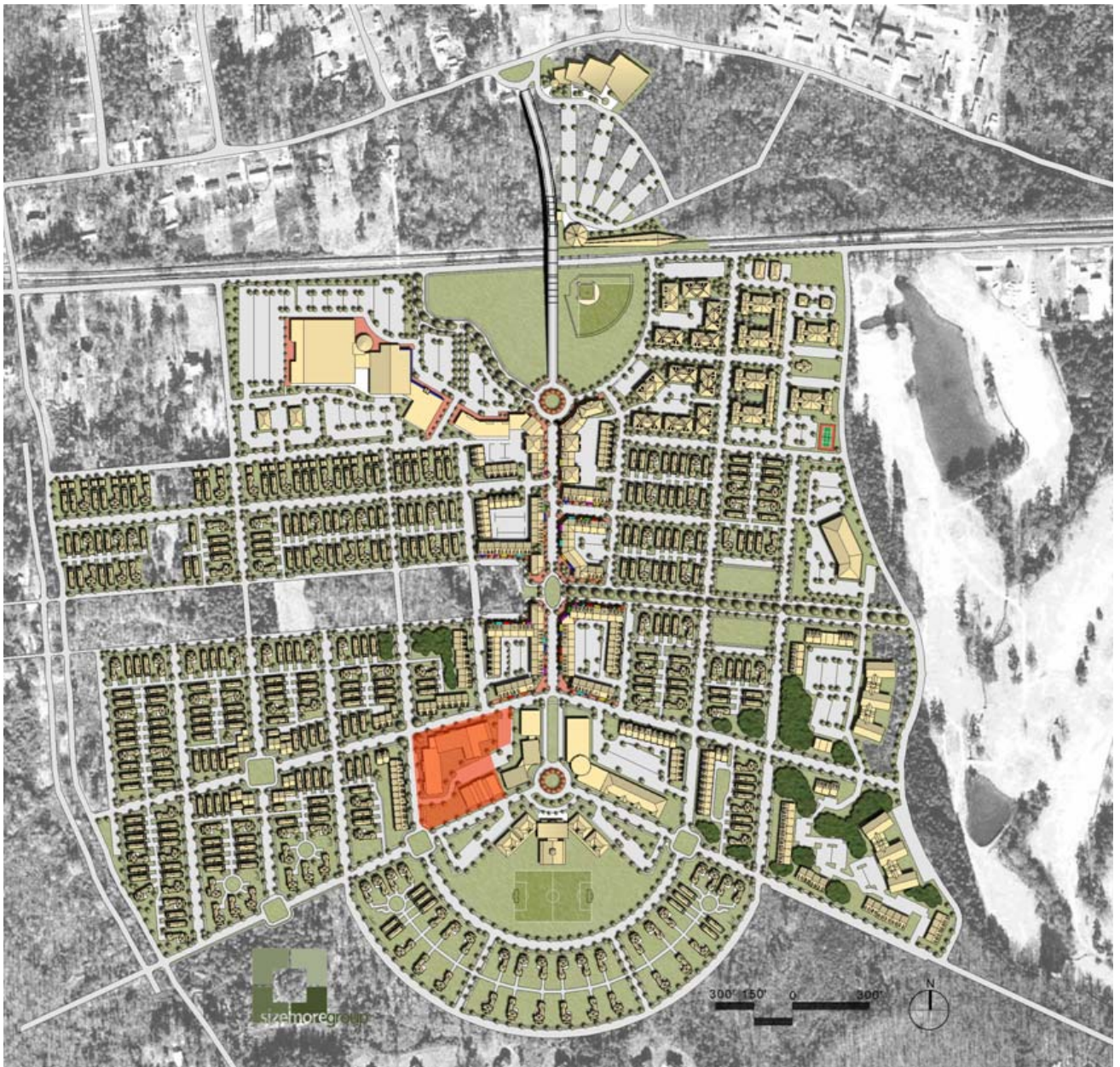


Figure 44: Bio-Technology Facilities

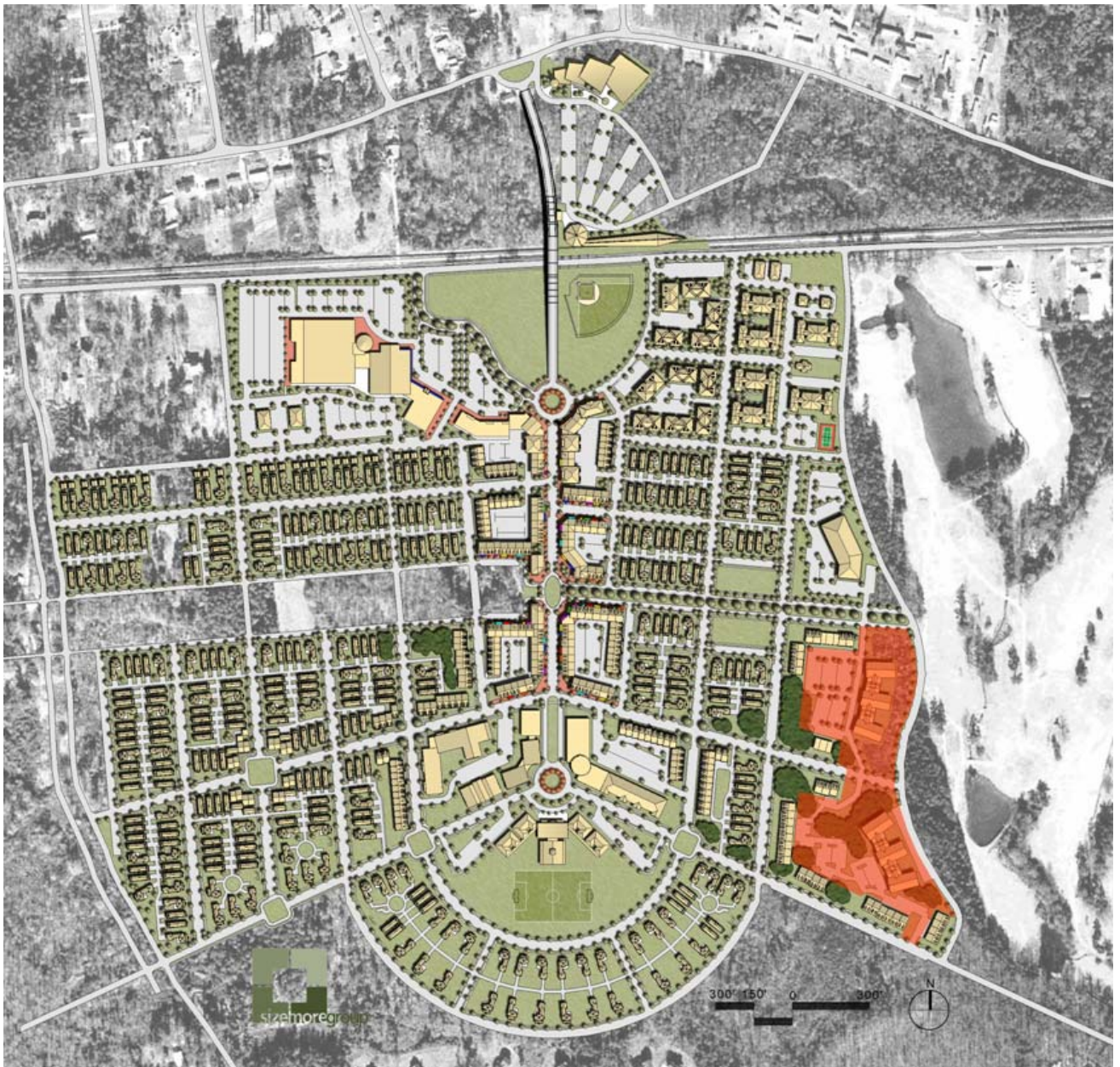
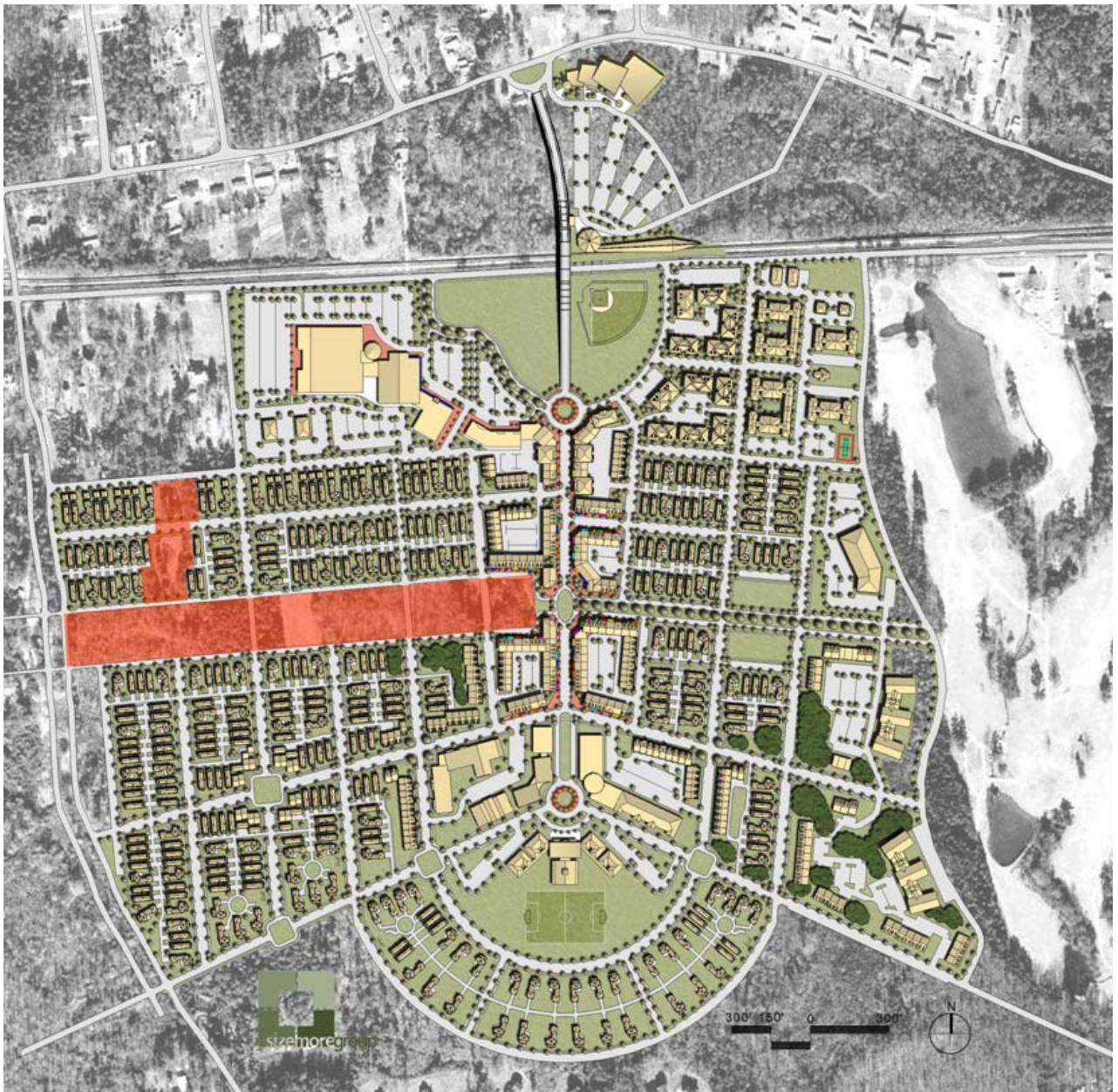


Figure 45: Major Park / Open Space Area



Concurrent to the process of developing a master plan for a livable community connected to a passenger rail station, an implementation plan must be created with the major project stakeholders in order to turn the plan into a reality. Creating an implementation plan is a difficult and long process in many cases due to the following factors:

- The necessity to involve the public
- Create an agreed upon vision among the stakeholders
- Secure funding
- Engage in development, which by nature is risky
- Unexpected changes
- Environmental factors, such as permitting and mitigation
- The complex nature of a multi-use development

However, while each project has unique challenges, there are components of the implementation process that can stand as guidelines to be followed by any number of jurisdictions or organizations. The following section presents a generic transit oriented development cycle that can be used as a rough course of action. This process is intended to be generic enough to be adapted for both station area plans along the Athens to Atlanta corridor as well as other passenger rail lines in Georgia.

7. Generic Station Development Implementation Process

7.1 Overview

This process includes three development phases and the roles and responsibilities of the lead agency, developer, and other stakeholders are delineated. The model assumes that selection of the rail alignment and general station locations have been made.

The project development and implementation cycle for transit-oriented development can, in simple terms, be summarized in the following phases:

Phase 1:

A: Develop A Common Vision

B: Initiate The Project

Phase 2:

A: Station Area Plan

B: Master Plan

C: Capital Improvement Plan

D: Incentives

E: Ensure “Development-Oriented Transit”

F: Entitlements

Phase 3:

A: Start Development

7.2 Phase 1

7.2.1 Phase 1A: Develop A Common Vision

Before site planning activity commences, there must be a common vision about what the key stakeholders, including the community, property owners, local community organizations, and regulating agencies, desire for the proposed station area. All of the key stakeholders must come discuss their ideas as to the kinds of changes that the area can achieve. Typically a government agency, such as the Georgia Rail Passenger Authority (GRPA), or a non-profit organization takes the lead in coordinating and staffing a process to develop the common vision. Often, the local government with zoning jurisdiction of the proposed station and community siting is often the most likely candidate to lead this task. In the case of this project, the GRPA was an obvious entity to play the lead coordination role because this process needs to be replicated in several jurisdictions along the rail corridor.

The development of the vision for the community should take place in the form of a workshop or a series of workshops. At the workshop(s), it is necessary that the most important stakeholders participate in the process because buy-in to the overall vision is critical; otherwise, the outcome is more likely to be challenged by essential and influential parties. It is ideal that the facilitator create an environment in which participants feel comfortable to brainstorm and discuss the issues at hand. Discussion of the development options might include topics such as multiple transportation choices, an array of housing types, the introduction of different commercial activities, a pedestrian friendly atmosphere, and minimal impact to the environment. Furthermore, at this visioning stage, it is appropriate to consider the size of the station and surrounding area. Questions such as will the area be comprised of the station alone, the station with mixed-use development, a station with high-density development, or the station as a transportation connection to a livable community that offers

residents and workers a myriad of shopping, dining, employment, and housing choices should be considered.

In addition, formal group discussion and brainstorming techniques, such as the Visual Preference Assessment and Visual Programming, can be employed to assist in the visioning process. The Visual Preference Assessment was used at the Community Workshop to help participants better understand land use and transportation concepts and patterns. In addition, the communications technique of Visual Programming, or “sketching” thoughts and ideas onto 5-inch by 8-inch white cards, was used to verify that the participants’ comments were correctly recorded. After audience review, these cards become evaluation criteria for developing different alternatives. It is essential that development alternatives are not discussed by this point, as it will color participants’ beliefs about what they want to see.

Depending on the status of the transit facility design, Phase 1A is the appropriate time to fine-tune the location of the transit station and supporting facilities, such as a park and ride lot. Before Phase 1B commences, a general overall vision for the station should have been created and have critical mass of agreement from the major stakeholders, specifically the property owners, developers, local governments, and lead agency.

7.2.2 Phase 1B: Project Inception

Taking this general vision for the area, further analysis and planning may be done in continued workshops, or more realistically, in a smaller groups of key stakeholders, such as an advisory committee staffed by the coordinating local government above, or technical / local experts in transit-oriented development, environmental and infrastructure issues, and the jurisdictional tax base, for example. Using this vision for broad direction, an advisory committee will help determine operational objectives for the project. For instance, a generalized land use sketch plan showing what functions the station area will perform, the manner in which the parking will be handled, and the transportation flow in and out of the station area. Furthermore, Phase 1B is the time to create a general financial and development plan for how the station and surrounding area will become a reality.

A preliminary market analysis on the real estate and demographic trends should be conducted at this stage by the lead government agency and the developer (if there is one at this point), with oversight and direction provided by the advisory committee. A preliminary regulatory review, especially of zoning and environmental policies, should be conducted. In addition, a site evaluation followed by the development of programmatic architectural designs based on the vision and advisory committee's evaluation is needed. The straw plan scheme achieved this objective of conceptually showing how the site would be oriented, the land uses provided, the transit operations, the transportation access points, and relation between station, community, and larger county area. The process for developing the preliminary site concept may follow that of developing the vision – namely in the workshop format followed with meetings with the advisory committee.

7.3 Phase 2

7.3.1 Phase 2A: Station Area Plan

With a conceptual plan developed and buy-in from key parties established, the next steps, described below, generally happen concurrently. All of these steps need to be completed before the project can move into the development phase. Each of these steps can be fairly lengthy, so it is important that the process and timeline is well-thought through to ensure efficiency and predictability.

Station area planning typically covers the area $\frac{1}{4}$ to $\frac{1}{2}$ mile from the station and involves a detailed assessment resulting in the preparation and local adoption of a station area vision or plan, containing the following:

- A land use map illustrating future uses

- A description of zoning to accompany the land use map

- An urban design plan

- A schedule for transit-oriented development and/or economic development projects and programs.

The issues in station area plans often include minimum development densities, parking maximums, and allowable uses and design requirements to promote walkability. Station area planning is an eligible activity for federal transportation funding.

7.3.2 Phase 2B: Master Plan

Where there are short-term development opportunities or land owned by a public entity that is intended to be offered for development, a more involved plan may be necessary. The master plan includes considerably more detail than the station area plan. The objective of the master plan is to provide a detailed description of the intended development, roles and responsibilities in implementation, and to provide the necessary approvals for development to proceed.

Furthermore, issues such as development exemptions, special zoning, and alternative public financing that are outside current zoning and development standards are often needed to create the master plan, also known as a specific area plan, urban renewal plan, or downtown development plan. It is possible to have a unique set of regulations, zoning, and public financing for the station area in order to achieve the objectives of the area. The plan must be approved of the governing body of the local government entity that has jurisdiction over the area with the lead agency, perhaps in coordination with the advisory committee, overseeing the approval process.

7.3.3 Phase 2C: Capital Improvement Plan

The capital improvement plan (CIP) specifies who will pay for sewer, water, streets, and open space, and the timeframe for this infrastructure to be built. More detailed engineering and planning need to take place to identify the project's infrastructure needs. Generally, the major CIP issues related to transit-oriented development are the following:

- Creating the greatest intensities around a 5 minutes walk of the station
- Strategies for dealing with parking, such as parking ratios, parking orientation and location, and parking management
- Developing the highest densities closest to the transit
- Designing the transit facility.

The local government normally has a 5 to 10 year or longer capital improvement program in place that identify jurisdiction-wide improvements. The local government must adjust the CIP to reflect proposed projects, with the oversight of the advisory committee.

7.3.4 Phase 2D: Incentives

Throughout the planning and development approval process, the affected government agencies need to consider how to encourage the private developer(s) to build what is consistent with the vision for the station area. Incentives generally come in two forms: financial and time based. The need for incentives arise due to the fact that the development envisioned for the station area may be denser, have a greater mix of uses, or have more amenities than conventional development in the area. To make the development financially feasible, the private developer may need either financial subsidy or another incentive, such as a quick approval. The agencies involved should provide tools and resources to make the development feasible from a pure market standpoint. Similarly, all parties must examine what can be done to jumpstart the marketplace to make the development a successful reality.

7.3.5 Phase 2E: Ensure “Development-Oriented” Transit

Although this is not a formal process, in order for the station area to be effective as a transit-oriented development, it is here that the government agencies involved need to examine their roles in how to make the design of the transit facility more development oriented. The key considerations here are ensuring that the rail line and station location are development and commuter friendly. That is, does the station parking separate it from the community and the planned development, is the facility designed to be walkable, and are there enough “destinations” that do not compete with nearby attractions, that the station area will be worth visiting. A transit-oriented development checklist, in Appendix P, provides a list of qualities that need to be considered to make this transit facility development friendly.

7.3.6 Phase 2F: Entitlements

Once the planning and development plans have been completed, the government agencies with regulatory jurisdiction adopt them. The plans need to contain enough detail to allow the developer predictability in the process of securing the necessary development approvals: complying with zoning, development standards, comprehensive plan, and other policies and regulations governing this area. By going through the Phase I process described above, the developer and the government agency will have a common understanding of what they, together, are trying to achieve. Prohibitive regulatory obstacles should have been addressed and resolved before this stage in the process. The

granting of an entitlement may be contingent on the developer constructing infrastructure or paying for infrastructure through an impact fee or meeting specific agency conditions. For instance, the developer may be asked to make improvements to a road, or pay for added sewer infrastructure proportional to the development impact. At the end of the entitlement process, which typically must be approved the jurisdictional governing body, the developer will have permission to commence the development.

7.4 Roles for Phases 1 and 2

Lead government/transit agency(-ies):

- Serves as coordinating entity and mobilizes the community and stakeholders in developing a vision for the area.
- Takes lead in planning and entitlements for the station area.
- Serves as the regulating agency in the construction development process.

Developer:

- Actively engaged in the visioning process.
- Reviews economic analysis and station area opportunities developed in workshops.
- Takes the lead role in the construction development process.

Other stakeholders:

- Participate in workshops and advisory committees to provide information and analysis throughout the process.

7.5 Phase3: Development

By this point, the planning process is complete, and the construction development process is starting. The following list highlights the major steps to be completed during this period, primarily by the developer.

Step 1: Formal Due Diligence and Project Feasibility: This includes site and environmental evaluation, preliminary regulatory review, and preliminary site evaluation and programmatic design.

Step 2: Contract Negotiation: Land assembly (if more than one owner), initial lease commitments, equity and debt contracts analysis, finalize construction documents and cost estimates, and receive public development approval.

Step 3: Formal Commitments: Construction loan, construction permits and approval and construction contracts awarded.

Step 4: Construction and Lease-up: Lease documents, construction administration, and construction inspections.

Step 5: Construction Completion and Initial Occupancy: Certificate of occupancy, permanent financing, pre-opening staffing, marketing program, tenant move-in, and grand opening.

Step 6: Property Management and Disposition: Management agreements, operating budgets, operations and risk management, and property sale.

End Notes

ⁱ <http://www.washingtonpost.com/ac2/wp-dyn/metro/traffic?nextstep=commuter>, November, 2001.

ⁱⁱ Hauser, E., Breese, A., Harrelson, T. “*Virginia Railway Express (VRE) – Pilot Project Northern Virginia.*” 1995. NCHRP Project 8-32(4). Page 171.

ⁱⁱⁱ Nelson, Arthur C. “*Transit Stations and Commercial Property Values: Case Study with Policy and Land Use Implications.*” 1998. Presented at Transportation Research Board 77th Annual Meeting.

^{iv} <http://www.demographia.com/db-atlmet2000.htm> - Demographia. Metropolitan Atlanta exceeds 4,000,000 Population. More Than 150,000 Above Expected. 05/15/02

^v http://www.barrowchamber.com/econ_main.htm - Barrow County Chamber of Commerce: Economic Development. 02/19/02 Page 1 of 1.

^{vi} Georgia Rail Passenger Authority, “*Georgia Rail Journal.*” Commuter Rail is best for Athens-Atlanta corridor, say managers. January – February, 2002 issue.

^{vii} Ibid.

^{viii} The Georgia Conservancy Blueprints for Successful Communities, February 2001, “*University Parkway & Atlanta-Athens Rail Corridor Regional Summary.*” Page 3.

^{ix} Georgia Trend, November 2001, “*Biotech Boosterism*.” Page 87.

^x The Georgia Conservancy Blueprints for Successful Communities, March 2001, “*Workshop 6- University Parkway and Atlanta-Athens Rail Corridor. Barrow County and Oconee County*.” Page 5.

^{xi} http://www.dot.state.ga.us/dot/planprog/planning/transportation_data/traffic_counts/2000/00cov013.pdf

^{xii} Georgia Rail Consultants, “*Athens to Atlanta Environmental Assessment*.” Page 2-46.